DOCUMENT RESUME

ED 423 267 TM 029 071

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TITLE	The State of State Standards.
INSTITUTION	Thomas B. Fordham Foundation, Washington, DC.
PUB DATE	1998-07-00
NOTE	40p.
AVAILABLE FROM	Thomas B. Fordham Foundation, 1015 18th Street, N.W., Suite 300, Washington, DC 20036.
PUB TYPE	Collected Works - Serials (022) -- Reports - Evaluative (142)
JOURNAL CIT	Fordham Report; v2 n5 Jul 1998
EDRS PRICE	MF01/PC02 Plus Postage.
DESCRIPTORS	*Academic Achievement; *Core Curriculum; Criteria; Education; *Educational Improvement; Elementary Secondary Education; English; Geography Instruction; History Instruction; Mathematics Instruction; Science Instruction; *Standards; *State Programs

ABSTRACT

The Fordham Foundation commissioned experts in each of the five core academic subjects (English, history, geography, mathematics, and science) to develop criteria for excellence and apply them to as many state standards as could be obtained. This summary report compiles the numerical scores and letter grades that each state earned in every subject. Policy makers, journalists, and concerned citizens can easily see a complete report card for their state. The report also presents some lessons from these findings. Some states did well in some subjects, but the main conclusion to be drawn from this study is that most of the states have a long way to go before their academic standards will be strong enough to bear the considerable burden now being placed on them. Their present weaknesses are great enough to be a grave threat to standards-based education reform. In every subject, the number of states receiving a "D" or an "F" outnumbered the number receiving an "A" or a "B." In English and history, only one state received an "A." When the data were aggregated, no state had an "A" average, and only Arizona, California, and Texas earned a "B" average. In every subject, at least one state published excellent standards, demonstrating that it can be done. The "Forum" section of the report contains commentaries on the standards movement by five eminent participators and observers: (1) Lynne Cheney; (2) Denis Doyle; (3) William Galston; (4) Will Marshall; and (5) Susan Traiman. One appendix contains the criteria for reviewing state standards, and the other contains the documents examined listed by state. (SLD)

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The State Standard

by
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and Gregg Vanourek

July 1998

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Fordham Report

Vol. 2, No. 5 July 1998

The State of State Standards

by
Chester E. Finn, Jr.,
Michael J. Petrilli,
and Gregg Vanourek

with commentaries by
Lynne Cheney
Denis Doyle
William Galston
Will Marshall
Susan Traiman

THOMAS B. FORDHAM FOUNDATION

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I. INTRODUCTION

The Thomas B. Fordham Foundation recently released appraisals of state standards in the five core academic subjects of English, history, geography, math, and science. These were the subjects highlighted at the 1989 Charlottesville Education Summit, where President Bush and the fifty governors declared that every American child should meet challenging academic standards by the year 2000. After the mostly disappointing results of efforts to write national standards (the history document, for example, was rejected 99-1 by the U.S. Senate), responsibility for standard-setting fell to the states. Most states have written or are now writing such standards and building accountability systems around them. If all goes as planned, state assessments will be based upon the standards. Schools, teachers, and students will be held accountable for reaching them. Real consequences, like the closure of a school, continued employment of a teacher, retention of a student, and salary of the principal, might result from reaching—or not reaching—these state standards. Teacher training and certification, curriculum and textbook selection, and much else will also follow from such standards. Thus, they have great potential for good or for harm. Much depends on their quality.

The main conclusion to be drawn from this ambitious project is that most of the states have a long way to go before their academic standards will be strong enough to bear the considerable burden now being placed on them. Their present weakness, in fact, is a grave threat to standards-based education reform.

We wanted to find out just how good state academic standards are today. Are they rigorous? Clear? Could any teacher, parent, or student pick them up and make sense of them? Are they likely to boost student achievement, if fully implemented? Do they point U.S. schools in the right direction?

To answer these questions, we commissioned experts in each of these five fields to develop criteria and apply them to as many state standards as could be obtained. The experts we commissioned obtained further advice from senior scholars and veteran educators in their disciplines. Careful analyses were undertaken of dozens and dozens of sets of state standards.

The grades have now been tallied. The results are in. They're not all bleak. Some states did well in some subjects. But the main conclusion to be drawn from this ambitious project is that most of the states have a long way to go before their academic standards will be strong enough to bear the considerable burden now being placed on them. Their present weakness, in fact, is a grave threat to standards-based education reform.

In every subject, the number of states receiving "D's" or "F's" outnumbered those receiving "A's" or "B's." In English, only one state received an "A" while 12 received "F's." In history, just one state received an "A" while 19 jurisdictions flunked. In geography, 3 states earned "A's" and 18 failed. The numbers for mathematics were 3 and 16, and for science, 6 and 9.

When we aggregate the data, the picture is just as troubling. We have compiled a grade-point average for each state. Using the traditional four-point scale, "A's" were worth 4.0 points, "B's" 3.0 points, "C's" 2.0, "D's" 1.0, and "F's" 0.0. According to this scale, no state earned an "A" average, only three states (Arizona, California and Texas) earned "B" averages, and nine states flunked. The national cumulative GPA was a 1.3, a "D+."

The news is not all bad, though. In every subject, at least one state published excellent standards, documents that can serve as models for others. These states prove the possible: good, tough, clear standards can be written, even within a highly politicized system.

The purpose of this summary report is twofold. First, we compile the numerical scores and letter grades that each state earned in every subject. Policy makers, journalists, and concerned citizens can efficiently view a complete report card for their state. (They can also see which documents were studied, since so many state standards are in flux. And they can review the "criteria" that the subject-matter experts applied to these standards.) Second, we seek to tease some lessons from the findings. What trends emerged across all subjects? What makes these standards, on the whole, so weak? Is there reason to hope that the standards movement can reclaim its potential? We present both our own observations on those questions and also the reflections of five eminent participant/observers in the standards movement.

In our Forum section, Lynne Cheney, former chair of the National Endowment for the Humanities and senior fellow at the American Enterprise Institute; Denis Doyle, senior fellow at the Hudson Institute; William Galston, professor in the School of Public Affairs, University of Maryland, College Park and director of the University's

Institute for Philosophy and Public Policy; Will Marshall, president of the Progressive Policy Institute; and Susan Traiman, director of the education initiative at The Business Roundtable share their insights regarding the current "state of state standards" and the future prospects of the standards movement.

The State of State Standards summarizes findings from the following reports:

Sandra Stotsky, *State English Standards: An Appraisal of English Language Arts/Reading Standards in 28 States*, Fordham Report Vol. 1, No. 1, July 1997.

David Warren Saxe, *State History Standards: An Appraisal of History Standards in 37 States and the District of Columbia*, Fordham Report Vol. 2, No. 1, February 1998.

Susan Munroe and Terry Smith, *State Geography Standards: An Appraisal of Geography Standards in 38 States and the District of Columbia*, Fordham Report Vol. 2, No. 2, February 1998.

Ralph A. Raimi and Lawrence S. Braden, *State Mathematics Standards: An Appraisal of Math Standards in 46 States, the District of Columbia, and Japan*, Fordham Report Vol. 2, No. 3, March 1998.

Lawrence S. Lerner, *State Science Standards: An Appraisal of Science Standards in 36 States*, Fordham Report Vol. 2, No. 4, March 1998.

While *The State of State Standards* is being published in mid-1998, it is important to note that the authors' evaluations of the state standards were for the most part conducted in 1997. Indeed, some of Dr. Stotsky's work on English/language arts dates back to January 1997. Thus, the reader should keep in mind that some standards documents evaluated in these reports have been revised or superseded. In some cases, drafts were amended and finalized. In other cases, new documents appeared. The standards movement is of course dynamic; this report is only a snapshot in time.

Please see Appendix II for information about the edition of each standards document that was evaluated.

Single copies of this report and its companion appraisals of state standards in the five subject areas are available free of charge by calling 1-888-TBF-7474, plus are available in full on the Foundation's web site: http://www.edexcellence.net. The reports are not copyrighted and readers are welcome to reproduce them, provided they acknowledge their provenance and do not distort their meaning by selective quotation.

II. SUMMARY OF THE SCORES

National Report Card[1] — State Standards Across All Subjects

(in alphabetical order)

STATE	ENGLISH[2] (n = 28)	HISTORY (n = 38)	GEOGRAPHY (n = 39)	MATH (n = 47)	SCIENCE (n = 36)	CUM. GPA	GRADE
Alabama	D	C	C	B	D	1.80	C-
Alaska	—	F	C	C	—	1.33	D+
Arizona	B	—	—	B	A	3.33	B+
Arkansas	—	F	F	F	F	0.00	F
California	—	B	D	A	A	3.00	B
Colorado	F	D	A	D	D	1.40	D+
Connecticut	—	C	F	D	B	1.50	C-
Delaware	D	F	F	C	B	1.20	D+
District of Columbia	—	C	C	D	—	1.67	C-
Florida	D	C	C	D	F	1.20	D+
Georgia	B	D	F	B	D	1.60	C-
Hawaii	F	—	—	F	A	1.33	D+
Idaho	F	—	C	F	—	0.67	D-
Illinois	B	F	D	D	B	1.60	C-
Indiana	F	C	A	C	A	2.40	C+
Iowa	—	—	—	—	—	—	—
Kansas	F	F	D	D	C	0.80	D-
Kentucky	—	F	F	D	F	0.25	F
Louisiana	—	C	C	F	B	1.75	C-
Maine	—	D	F	F	D	0.50	D-
Maryland	—	F	F	F	—	0.00	F
Massachusetts	A	B	D	F	C	2.00	C
Michigan	F	F	B	F	—	0.75	D-
Minnesota	F	F	F	—	—	0.00	F
Mississippi	D	—	F	B	F	1.00	D
Missouri	F	F	C	F	C	0.80	D-
Montana	—	—	—	F	—	0.00	F
Nebraska	—	F	—	F	D	0.33	F
Nevada	—	—	—	—	—	—	—
New Hampshire	D	C	B	C	F	1.60	C-
New Jersey	F	F	F	C	A	1.20	D+
New Mexico	—	F	F	F	F	0.00	F
New York	C	F	F	B	C	1.40	D+
North Carolina	—	F	C	A	—	2.00	C
North Dakota	—	—	F	D	F	0.33	F
Ohio	F	D	D	A	—	1.50	C-
Oklahoma	C	D	F	F	—	0.75	D-
Oregon	F	—	—	D	C	1.00	D
Pennsylvania	—	F	—	D	—	0.50	D-
Rhode Island	—	—	—	F	A	2.00	C
South Carolina	—	—	—	D	D	1.00	D
South Dakota	—	—	—	F	—	0.00	F
Tennessee	F	D	F	C	F	0.60	D-
Texas	B[3]	B	A	B	C	3.00	B
Utah	C	C	C	B	B	2.40	C+
Vermont	—	F	F	C	B	1.25	D+
Virginia	B	A	D	B	D	2.40	C+
Washington	D	F	F	F	B	0.80	D-
West Virginia	—	C	B	B	F	2.00	C
Wisconsin	C	F	F	C	C	1.20	D+
Wyoming	—	—	—	—	—	—	—
United States	**D+** (1.21)	**D** (0.97)	**D** (1.15)	**D+** (1.40)	**C** (1.83)	**1.31**	**D+**

Note: Italicized states have grades for only 2 subjects or fewer.

Grading Scale

A	3.83 – 4.00	B+	3.17 – 3.49	C+	2.17 – 2.49	D+	1.17 – 1.49	F	< 0.50
A-	3.50 – 3.82	B	2.83 – 3.16	C	1.83 – 2.16	D	0.83 – 1.16		
		B-	2.50 – 2.82	C-	1.50 – 1.82	D-	0.50 – 0.82		

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National Report Card — State Standards Across All Subjects
(in rank order by cumulative GPA)

STATE	ENGLISH (n = 28)	HISTORY (n = 38)	GEOGRAPHY (n = 39)	MATH (n = 47)	SCIENCE (n = 36)	CUM. GPA	GRADE
Arizona	B	—	—	B	A	3.33	B+
California	—	B	D	A	A	3.00	B
Texas	B[3]	B	A	B	C	3.00	B
Indiana	F	C	A	C	A	2.40	C+
Utah	C	C	C	B	B	2.40	C+
Virginia	B	A	D	B	D	2.40	C+
Massachusetts	A	B	D	F	C	2.00	C
North Carolina	—	F	C	A	—	2.00	C
Rhode Island	—	—	—	F	A	2.00	C
West Virginia	—	C	B	B	F	2.00	C
Alabama	D	C	C	B	D	1.80	C-
Louisiana	—	C	C	F	B	1.75	C-
District of Columbia	—	C	C	D	—	1.67	C-
Georgia	B	D	F	B	D	1.60	C-
Illinois	B	F	D	D	B	1.60	C-
New Hampshire	D	C	B	C	F	1.60	C-
Connecticut	—	C	F	D	B	1.50	C-
Ohio	F	D	D	A	—	1.50	C-
Colorado	F	D	A	D	D	1.40	D+
New York	C	F	F	B	C	1.40	D+
Alaska	—	F	C	C	—	1.33	D+
Hawaii	F	—	—	F	A	1.33	D+
Vermont	—	F	F	C	B	1.25	D+
Delaware	D	F	F	C	B	1.20	D+
Florida	D	C	C	D	F	1.20	D+
New Jersey	F	F	F	C	A	1.20	D+
Wisconsin	C	F	F	C	C	1.20	D+
Mississippi	D	—	F	B	F	1.00	D
Oregon	F	—	—	D	C	1.00	D
South Carolina	—	—	—	*D*	*D*	*1.00*	*D*
Kansas	F	F	D	D	C	0.80	D-
Missouri	F	F	C	F	C	0.80	D-
Washington	D	F	F	F	B	0.80	D-
Michigan	F	F	B	F	—	0.75	D-
Oklahoma	C	D	F	F	—	0.75	D-
Idaho	F	—	C	F	—	0.67	D-
Tennessee	F	D	F	C	F	0.60	D-
Maine	—	D	F	F	D	0.50	D-
Pennsylvania	—	*F*	—	*D*	—	*0.50*	*D-*
Nebraska	—	F	—	F	D	0.33	F
North Dakota	—	—	F	D	F	0.33	F
Kentucky	—	F	F	D	F	0.25	F
Arkansas	—	F	F	F	F	0.00	F
Maryland	—	F	F	F	—	0.00	F
Minnesota	F	F	F	—	—	0.00	F
Montana	—	—	—	*F*	—	*0.00*	*F*
New Mexico	—	F	F	F	F	0.00	F
South Dakota	—	—	—	*F*	—	*0.00*	*F*
Iowa	—	—	—	—	—	—	—
Nevada	—	—	—	—	—	—	—
Wyoming	—	—	—	—	—	—	—

Note: Italicized states have grades for only 2 subjects or fewer.

Grading Scale

A	3.83 – 4.00	B+	3.17 – 3.49	C+	2.17 – 2.49	D+	1.17 – 1.49
A-	3.50 – 3.82	B	2.83 – 3.16	C	1.83 – 2.16	D	0.83 – 1.16
		B-	2.50 – 2.82	C-	1.50 – 1.82	D-	0.50 – 0.82

F < 0.50

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III. LESSONS FROM THE REPORTS

In the five core academic subjects, according to the experts who conducted these analyses for the Thomas B. Fordham Foundation, most states have thus far failed to set clear and rigorous expectations for what children should know and be able to do. Can genuine and significant achievement gains be expected to follow? Why are these standards so disappointing? What went wrong?

Unfortunately, many state standards documents turned out to be vague and nebulous.

In this section, we address six questions raised by these analyses:

1. Why are many state standards so vague?
2. Why are many state standards hostile to knowledge?
3. Why are many state standards entranced by "relevance"?
4. Why do many state standards confuse classroom means with educational ends?
5. How politicized are the state standards?
6. To what extent did national standards impact state standards?

1) Why are many state standards so vague?

All of the authors of the Fordham Reports began with the common-sense conviction that any serious academic standard must be clear, specific, and measurable. For example, several of the criteria that Sandra Stotsky used to evaluate English standards revolved around clarity and specificity. She asked that standards be "written in clear English prose, for the general public as well as for educators," and that they be "clear," "specific," and "measurable."

Similarly, several of the criteria that David Saxe used to appraise history standards also focused on clarity and specificity:

A.1. Standards are clear and measurable.
A.2. Standards describe what is to be taught and learned.
A.4. Students are expected to learn important and specific facts, events, individuals, and issues.

Unfortunately, many state standards documents turned out to be vague and nebulous. For example, in history, 19 states (out of 37 evaluated) received 2 points or less (out of 12) on the cluster of criteria called "Clarity." In Stotsky's evaluation of English standards, 12 states (of 28 evaluated) received scores of 1 or 0 (out of 4) on the criteria seeking specificity and measurability. Only 8 states included specific titles of books to illustrate the levels of reading difficulty that they hope students will attain.

In Susan Munroe and Terry Smith's appraisal of geography standards, the picture was only slightly brighter. While they concluded that, in general, "standards writers have steered clear of professional jargon and have written clearly and sensibly," they noticed a gaping lack of specificity:

> States do not do well in meeting this criterion. The average score is 1.9 [3.0 would be perfect]. Poor performance on this measure is particularly disconcerting as the essential point of standards is to convey with precision what students should master. Far too many states cast their standards in terms that will likely leave curriculum developers, students, and teachers scratching their heads as to just what is expected of them.[4]

Munroe and Smith go on to note that "there is a high correlation between states scoring poorly on this item and their faring poorly in the overall evaluation." The 11 states that fared the worst on the "specificity" criterion also received failing grades for their geography standards overall.

Why are so many state standards so vague? We've spotted four possible explanations.

The first is the "committee process" that many jurisdictions used to develop their standards. It's possible that there were just too many cooks adding to the broth (often including politicians, educators, citizens, experts, "resource persons," business leaders, textbook publishers, parents, etc.), and therefore the final result was less than tasty. Either too much was included in order to placate various factions and satisfy individual enthusiasms—and the product was therefore shapeless and sprawling, or—in the interests of committee consensus—the process had to settle for a high level of generality rather than featuring the specifics that would be of greatest value to consumers of the standards.

A second explanation is that state standards writers are reluctant to take sides in the "culture wars" or to participate in the selection of a "canon." By spelling out which books children should read in English class, which individuals and events to study in history, and which discoveries and inventions to discuss or replicate in science lab (and, of course, which to omit), standards authors are making decisions about what is important for American children to

know and be able to do. They are setting priorities.

That, in our view, is exactly what the writers of standards are supposed to do. But, of course, such matters are contentious, the stuff of great debate, the underpinnings of disparate worldviews. Perhaps from exhaustion, perhaps from timidity, many states opted to sidestep such choices. The results, not surprisingly, are vague and (to us) unhelpful standards.

A third explanation—actually voiced by several states in response to low marks in these analyses—is that the state believes in "local control" and intentionally defers decisions about educational specifics to individual districts or, perhaps, schools. That may make for a good sound byte but it's really an abdication of responsibility. Instead of running with the standards ball, these states chose to punt.

How can we expect students to master a body of knowledge if we fail to define what that body of knowledge is—and then convey it to them in a meaningful and accessible way? Vague standards set schools adrift without a map or compass—or even a destination.

One sees evidence of this reasoning in standards documents themselves and in remarks by state officials. For example, in an attempt to explain why his state did poorly on various evaluations, a New Jersey official was quoted in the media as saying, "When they [the AFT and Fordham reports] accuse our standards of lacking specificity and measurability, we say, 'That's right, we know that. They lack specificity because they weren't designed to be specific. We are a local control state.'"

A consultant to Michigan's Department of Education told a reporter that Michigan's standards were meant to be a "broader mission statement" and that local schools would have had a difficult time trying to turn "detailed standards" into curriculum. Taking this reasoning a step further, Iowa doesn't have any state standards and doesn't intend to write any, in deference to local control. But Iowa, at least, is being honest and consistent. It doesn't pretend to have state standards. What troubles us are the states that say they do but really don't.

Regarding history standards, Saxe wrote the following:

> In reviewing states' scores, one can spot a clear division between states that take the responsibility to assert leadership in promoting history as the means to deliver information and develop skills for effective American citizenship, and states that delegate this responsibility to local districts. . . . The distinction between state standards meant as mandated guidelines for local districts and those meant to be flexible or advisory is important. . . . [T]hose states that leave all substantive decisions to districts or schools receive the fewest points of all.[5]

The problem here is that vague standards are bound to serve as a barrier rather than a ladder to achievement. How can we expect students to master a body of knowledge if we fail to define what that body of knowledge is—and then convey it to them in a meaningful and accessible way? How can we monitor their progress toward benchmarks if we refuse to state those benchmarks in clear, identifiable, and measurable ways? How can we enlist the help of parents, volunteers, corporations, and others if nobody knows what they're supposed to be working towards? Vague standards set schools adrift without a map or compass—or even a destination.

The fourth possible explanation for vagueness in academic standards is that the state may be having political or organizational problems with its assessment and accountability arrangements. Of course, the more explicit standards are, the easier it is to hold people accountable for attaining them—and to know for sure whether they've been attained. One way to ease or defer that pain is to keep the standards nebulous.

On the other hand, many states are actually in the process of pinning high-stakes assessments to their standards. Attaching high-stakes assessments to vague standards is a formula for disaster. Dr. Stotsky warns:

> Control will still be exerted at the state level by the assessments, whether or not a state's standards are vague. Everyone knows that state assessments are the tail that will eventually wag the curricular dog. They will do so by means of the kind of reading passages they contain, the kind of language they use, the kind of knowledge they expect of students, and the level of difficulty them embody.
>
> Deliberately vague standards are in essence a façade behind which public officials can create tests so ideologically mischievous that they lead to problematic local curricula or so academically undemanding that they are as ineffective as the older and discredited competency tests were.[6]

It is worth acknowledging that a few states' standards (especially Virginia's) have been criticized for being too specific. The argument is that by blitzing students with long lists of facts to learn, the standards will produce a curriculum that's a "mile wide and an inch deep," and perhaps the patterns that should link the facts will never be expli-

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cated.[7] This is a risk, to be sure, if standards turn out to be nothing more than lists of facts. Lawrence Lerner ran into a few of these in science. But the evidence to date suggests that the opposite problem is far more widespread: nebulous standards that provide no real guidance to anyone who might benefit from it. It does no harm to caution states like Virginia to guard against "list-itis." But it seems to us that many states would benefit from a mild case of this malady.

Examples of Vague Standards

- In Wisconsin's history standards, students reaching the end of the eighth grade "cluster" are expected to "employ cause-and-effect arguments to demonstrate how significant events have influenced the past and present in United States and world history."[8]

- In Alaska's math standards, 16-18 year-olds are asked to do the following: "Apply principles, concepts, and strategies from various strands of mathematics to solve problems that originate within the discipline of mathematics or in the real world."[9]

Examples of Clear and Specific Standards

- The student will compare the Charters of the Virginia Company of London, the Virginia Declaration of Rights, the Virginia Statute of Religious Freedom, the Declaration of Independence, the Articles of Confederation, and constitutions of the United States and Virginia, as amended, with emphasis on their treatment of: fundamental political principles including constitutionalism and limited government, rule of law, democracy and republicanism, sovereignty, consent of the governed, separation of powers, checks and balances and federalism. . . . [Virginia history standards, grade 7][10]

- [The student will] "recognize that the rectangles having the same area can have different perimeters; understand that the same number can be the perimeter of different rectangles, each having a different area." [California's *Mathematics Academic Content Standards* (February 1998), grade 4][11]

2) Why are many state standards hostile to knowledge?

Standards essentially clarify what students are expected to *know* and be able to *do* at various points in their academic careers. Accordingly, all of our authors looked for the specific *knowledge* and *skills* that the states want students to master. Unfortunately, in the majority of cases they found standards that emphasize skills and minimize knowledge.

Stotsky, for example, searched for acknowledgement of the existence of a body of works called "American literature" and of specific literary movements that students need to read and know. She found very few. Only four states (Alabama, Georgia, Massachusetts, and Virginia) adequately demanded that students study American literature and specific literary movements. The others refused to demarcate any essential works. She writes:

> There is nothing—in theory, at least—oppressive about including in a standards document a requirement that students study the literature of their own country, particularly in grade 11, where it has traditionally been taught. Nor is it oppressive to expect students to study works by well-regarded authors who wrote about their own state or region, an intention that can be expressed in a general statement without necessarily mentioning specific authors.[12]

However, it appears that many states were anxious that even hinting at a literary "canon" would expose them to charges of cultural insensitivity. For example, the Washington State Standards ask students to read a "variety of traditional and contemporary literature." Students must be able to read, but apparently it doesn't matter what.

It is possible, Stotsky illustrates, to point to a specific body of knowledge without being overly prescriptive. She argues that Massachusetts (where she helped write the standards) demonstrates one approach:

> [Massachusetts] provides two suggested lists in its appendices, a literary heritage list designating, for the most part, key authors (not works) contributing to American and British literary culture up to World War II, and a list of contemporary American authors as well as important authors from other countries and cultures at different historical periods. In a guiding principle, it recommends a balance between the two lists in the construction of a literature program and, in fact, is currently attempting to draw equally from the two lists in the selection of literary passages for forthcoming statewide assessments.[13]

Stotsky raises an important point: if states base their assessments on their standards, yet their standards are devoid of specific literary works or movements, then what knowledge will their assessments test? Obviously, they won't be asking students what they understand about *Invisible Man* or Mark Twain or *A Tale of Two Cities*. Many students will continue to graduate without studying the classic works that helped define American culture.

States were far more enthusiastic about demanding skill development. For example, most scored quite well on Criterion C7: "The standards clearly address research processes, including developing questions and locating, understanding, evaluating, synthesizing, and using various sources of information for reading, writing, and speaking assignments. These sources include dictionaries, thesauruses, other reference materials, observations of empirical phenomena, interviews with informants, and computer data bases." Twenty-one of the 28 states graded earned a high mark (3 or 4 out of 4) on this skill-based criterion. One might infer that the states consider it more important for students to be able to look things up than to read great works of literature.

It appears that many states were anxious that even hinting at a literary "canon" would expose them to charges of cultural insensitivity. Students must be able to read, but apparently it doesn't matter what.

The preference for skills over knowledge is also evident in history. Saxe gave most states low scores on the criteria, "Standards include specific studies in United States history," and "Standards include specific studies in European and world history." For these two categories, less than 20 percent of the states met these criteria for at least two of the three levels (elementary, middle, high school). Twice as many reached this mark on the criterion, "Students are encouraged to develop and apply historical skills."

Why are so many state standards hostile to knowledge? We have two possible answers: the legacy of educational progressivism, and present-day notions of relativism.

The dichotomy between knowledge and skills has long existed within the education world. Tracing back to the 19th century is an assumption that, as long as a student "exercises" her "thinking muscle," what she studies is not important. This theory was used to justify instruction in Greek and Latin, since these tough subjects were thought to strengthen one's mental discipline. A strain of this theory has resurfaced, this time under names like "constructivism" or, in E.D. Hirsch's phrase, "educational formalism." Such theories have been used to justify the replacement of cultural content with the "mastery" of skills.[14]

In his 1996 book, *The Schools We Need and Why We Don't Have Them*, Hirsch details the knowledge-aversion of the education "thoughtworld." He argues that the European Romantic Movement infused it with the belief that children should be allowed to develop "naturally" and that any molding of their intellects was oppressive and destructive. Early 20th century progressive educators integrated these notions into the pedagogy that has come to dominate America's schools ever since. Its modern-day variation, constructivism, now dominates the education profession.[15]

Students should be allowed to learn what they want to learn, these theorists argue. What really matters is learning how to learn, learning "higher-order thinking skills." Thus, for example, learning how to do library research (regardless of what the student is researching) becomes more important than reading great works of literature.

Of course, few skills are useful without any knowledge. A child doing library research will soon become frustrated when her lack of background information constrains her from understanding what she is reading. Knowledge is to skills as bricks are to mortar: you need both to build a strong wall.

Fashionable notions of relativism also help to explain the anti-knowledge phenomenon. There is no actual truth or definite knowledge, relativists believe, only various culturally determined "scripts" or "versions" of the truth. It would be oppressive, they argue, for a state to identify specific knowledge that must be learned by all. Any such knowledge would be nothing more than the script preferred by the dominant class. Better to leave it out altogether.

But by omitting knowledge, the states missed half their opportunity. Skills are essential in life, especially for the workplace, but we educate our children to be citizens as well as workers. In a democracy, it is imperative for every voter to have a working knowledge of the nation's heritage, history, and cultural and intellectual institutions. Neil Postman suggests in *The End of Education* that today's students should become part of the story that is the American Experiment. As Postman explains, there is a legacy of hundreds of years of political and intellectual argument. This is not only true in history and politics; every major field, from science to literature, is an evolving conversation. If we want students to "have a voice," then they need to know what was said before they stepped onto the Earth.[16] Pointing to specific knowledge and asking students to acquire it is not oppressive; rather, it is

Example of a Skills-Based Standard

[The student should] (1) Locate main ideas in multiple types of sources (e.g., nonprint, specialized references, periodicals, newspapers, atlases, yearbooks, government publications, etc.) (2) Take notes and develop outlines through reading, listening, or viewing. (3) Use features of books for information: table of contents, glossary, index, appendix, bibliography. (4) Distinguish between fact and opinion relating to regions/cultures. [Georgia Standards, grade 7, Social Studies Skills][17]

Example of a Knowledge-Based Standard

The student will identify the sources and describe the development of democratic principles in Western Europe and the United States. . . . [A]fter examining major documents (such as the Declaration of Independence, the Constitution of the United States, the English Bill of Rights, the Declaration of the Rights of Man, or the Universal Declaration of Human Rights) for specific democratic principles they contain, the student makes a comparison chart showing how certain principles appear in these documents. [California Standards, Standard 3, grade 10][18]

empowering, as it allows young people to participate in and add to arguments that have raged for years. We oppress students the most when we expect from them the least.

3) Why are many state standards entranced by "relevance"?

Copernicus may have discovered that man is not the center of the universe, but you wouldn't know it by looking at most state standards. Overwhelmingly, according to our authors, they embrace the notion that *everything* must be related to the child's own life. Many standards-writers appear to have added to John Dewey's admonition to "fit the school to the child" a corollary: "fit the world to the child."

Our authors watched for a romance with relevance, and it was not hard to find. This was especially true in mathematics. Ralph Raimi and Lawrence Braden included in their negative criterion, "False Doctrine," an excessive emphasis on "real-world" problems. Roughly half the states were graded down (0, 1, or 2 out of 4) for False Doctrine. Raimi and Braden explain why math should not be taught only as a practical tool:

> [M]athematics is today widely regarded (in the schools) as something that must be presented as usable, "practical," and applicable to "real-world" problems at every stage of schooling, rather than as an intellectual adventure.
>
> Mathematics does indeed model reality, and is miraculously successful in so doing, but this success has been accomplished by the development of mathematics itself into a structure that goes far beyond obvious daily application. Mathematics is a deductive system, or a number of such systems related to one another and to the world, as geometry and algebra are related to each other as well as to statistics and physics; to neglect the systematic features of mathematics is to condemn the student to a futile exercise in unrelated rule memorization.[19]

Obsession with the "real world" can also result in plain silliness, as lessons are stretched or crammed to fit into a Procrustean bed of relevance. Raimi and Braden give an example from Florida:

> On page 50, the Performance Description MA.A.1.4.3a, "determines whether calculated numbers are rational or irrational numbers"; it is exemplified by a contrived "real world" situation concerning when an automobile's braking distance is given by a rational or irrational number. Real-world physics has not yet achieved the means of determining whether a measurement is or is not that of an irrational number. Thus, here is an example of straining after "real-life" ends by presenting a false scientific, if not mathematical, doctrine.[20]

Reverence for relevance is also evident in many state English standards. Nineteen of the 28 documents Stotsky examined require students to relate what they read to their own lives or personal experience. This defeats the point of reading great works of literature, Stotsky argues:

> [T]o require students at higher educational levels to read their lives into the literature they are asked to study undermines the very capacity of a literary work to help readers transcend their limited experiences. A major function of literature is to expand perspectives and free students from insularity. Thus, we should want to know what new insights into human relationships or into the deployment of literary skills students have

gained from a literary work, rather than to compel them to reduce the experiences within the work to those with which they are already familiar.[21]

Why are the states shy about asking students to know and be able to do important things that may not be immediately relevant to their daily lives? Perhaps they fear that children of the MTV generation will tune out if asked to step too far outside the youth culture or into abstract thinking. This approach, of course, only serves to dumb-down expectations and to suggest that standards-setters don't trust local teachers to make the material interesting to their students. Great teachers have always found ways to spark classroom enthusiasm for the material studied. Children have always enjoyed learning about far-away times and places; imagination that can transcend personal experience is one of the finest achievements of mankind. States should stick to setting expectations; teachers should be held accountable for helping students reach them. Worrying about how to motivate children to learn should be left to schools, parents, and teachers. They will find many creative ways to engage children.

Perhaps standards-writers also harp on relevance because they want to help students understand themselves. Self-actualization might be a worthy goal for individuals, but it is not the interest of the state. The state should want a student to use literature, math, and history to understand the world; helping the child understand himself is best left to parents and clergy.

Copernicus may have discovered that man is not the center of the universe, but you wouldn't know it by looking at most state standards. Overwhelmingly, according to our authors, they embrace the notion that everything must be related to the child's own life.

Example of Over-Emphasis on Relevance

[Students] "connect their own experiences to those of literary characters by . . . relating to the feelings of characters of varying ages, genders, nationalities, races, cultures, religions, and disabilities; d. identifying with characters based on a clear understanding of motivation and situations; e. relating incidents in the text to life experiences; f. relating the theme of literary text and media to personal experience." [Delaware's English/Language Arts Standards (June 1995)][22]

4) Why do many state standards confuse classroom means with educational ends?

Education standards should be clear about what is to be learned by students at various grade levels and how well it is to be learned. Period. Standards should not seek to prescribe teaching methods, pedagogical strategies, or lesson plans. Standards are about ends, not means. Yet many states either do not understand this distinction or do not agree with it. Too often, pedagogy has seeped into state standards, muddling their usefulness and confusing their aims. Instead of just clarifying expectations and trusting schools and teachers to decide how best to meet them, some states have embraced a particular philosophy of teaching. In a sense, these states have written standards of teaching rather than standards of learning.

This mingling of means and ends is especially evident in mathematics and English. In their scrutiny of math standards, authors Raimi and Braden found that many states did not show discipline in staying out of pedagogical matters, and when they did give advice, it was often bad advice. Here's an example from Alabama:

> Throughout their schooling, students should be involved in activities in which manipulatives are used to aid in conceptual and procedural understanding. . . . Use of manipulatives helps . . . clarify algorithms. . . . Using manipulatives also richly illustrates the connection between concrete experiences and abstract mathematics. [*Alabama Course of Study, Mathematics (1997)*, General Introduction][23]

Raimi and Braden explain what's wrong with this directive:

> In the early childhood years, the use of manipulatives, such as blocks, Cuisinaire rods, and surely the abacus, can give a child the basis in experience that must underlie the abstractions of mathematics; and the world has used them since the dawn of mankind. But "throughout" their schooling is an error, and has moreover led to an unnecessarily large manipulatives industry allied to textbook publishing, whose products decorate the displays at teachers' conferences and professional journals.[24]

Alabama could have avoided this issue by limiting itself to specifying clearly what students should know and be able to do. No doubt some schools would use manipulatives in class, but no schools should be forced to do so. It's the results, after all, that matter.

Rhode Island went even further. It provided within its standards document a list of features of a "traditional classroom" versus those of a "learning community." Raimi and Braden explain:

> Opposite "Teacher knows the answer," is "More than one solution may be viable and teacher may not have it in advance." Opposite "Thinking is usually theoretical and 'academic'" is "Thinking involves problem solving, reasoning, and decision-making."[25]

Great teachers have always found ways to spark classroom enthusiasm for the material studied. States should stick to setting expectations; teachers should be held accountable for helping students reach them.

This advocacy of preferred pedagogies strikes us as dangerous not because the pedagogy itself is necessarily flawed but because Rhode Island has chosen to use its standards to force a "one size fits all" approach upon all the schools in its jurisdiction. Standards, if done right, should not standardize the schools. Rather, they should free the schools from top-down dictates while obliging them to focus on results.

Confusion between means and ends is also evident in English. Stotsky found that several state standards push specific teaching methods:

> Many documents promote other pedagogical practices that have little or no solid support in research. Ohio and Idaho strongly promote heterogeneous groupings at all grades, as if there were a clear and large body of evidence showing that all students gain from it; in fact, there is no body of evidence in favor of heterogeneous groupings as a replacement for honors and advanced placement courses in high school. . . . A number of states (Texas, Minnesota, and Ohio, for example) try to prevent teachers from engaging students in systematic word study by inhibiting the use of noncontextual approaches to vocabulary study, insisting that students are to increase their reading vocabularies by using context clues and dictionaries only.[26]

Why are states even entering these debates? Stotsky contends that the Massachusetts standards appropriately draw the line between pedagogy and results:

> In its introductory material, it states that "no one instructional approach can meet all the needs of each learner." It invites teachers to "explore the strengths of multiple approaches to instruction" and makes clear that it "does not intend to promote one approach over others." It goes on to say that "teachers should judge when it is best to use direct instruction, inductive learning, Socratic dialogue, or formal lecture" or "when it is appropriate for students to work individually, in small groups, or as a whole class." It concludes by noting that these decisions should be based on the teacher's "careful assessment of students' knowledge, interests, and skills."[27]

Massachusetts not only did an excellent job focusing on results; it also empowered education professionals. The language quoted above shows enormous respect for school-level educators and their ability to make thoughtful decisions about how to teach their students. Schools can figure out hundreds of creative ways to reach these standards,

Examples of Standards as Means Instead of Ends

- About Idaho's English Standards, Stotsky writes: "The document is heavily oriented to a process approach for reading and writing, to a reader-response approach for literary study, to learning all skills in context, and to a focus on students' values and attitudes. It even offers a number of "position statements" at the end of the document that promote a variety of trendy pedagogical ideas."[28]

- About Michigan's Model Content Standards, Raimi and Braden write, "The educational philosophy . . . is clear and definite: These standards are to be consistent with the "constructivist" view of the educational process, 'firmly grounded in the work of John Dewey. . . . In other words, it is no longer sufficient to simply know mathematical facts; learners must be able to apply them to problems in the real world.' . . . The items are vague, and are more exhortations than standards."[29]

ways that state-level policy makers could never imagine. States should think twice before promulgating standards that may stifle this ingenuity.

Yet many pushed particular teaching philosophies—usually of the "constructivist" variety. Why was this so?

Perhaps many standards-writers believed their mission was to reform teaching in their states rather than to clarify what students should learn. A national parallel is instructive. The "NCTM Standards," actually (and accurately) called *Curriculum and Evaluation Standards for School Mathematics*, were released in 1989 and quickly became the model for what many people believed standards should be in math and in other academic subjects. But even NCTM advertised its work as standards for teaching. NCTM wanted to replace what it viewed as boring, oppressive lessons with dynamic, engaging ones. Teachers became facilitators rather than instructors and students became active learners rather than depositories of information. Regardless of what one thinks of this teaching philosophy, it does not meet our definition of standards: statements clarifying what students should know and be able to do at various points in their academic career. Yet state and national standards-writers in math and other fields embraced the NCTM model. This was especially true for standards written by professional education groups. Many of these groups show a missionary zeal for the constructivist philosophy, though in fairness, many outside groups show equal enthusiasm (and dogmatism) for phonics and memorization.

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This is a trap that states can easily avoid. If they focus on core knowledge and essential skills and leave the teaching techniques to the schools, they will have provided a workable service. They will also enable a plurality of school models to emerge, a range of choices that together can better serve the needs and learning styles of every child.

5) How politicized are the state standards?

All of the authors of the Fordham Reports watched for politicization: to what extent do state standards documents—intentionally or otherwise— appear to indoctrinate students with particular views on issues and controversies, to color information in an ideological way, or to coax students to adopt fashionable social and political agendas? All of our authors built these considerations (in more refined forms) into their appraisals.

For obvious reasons, it's important to guard against politicization in academic standards, especially those meant to apply to all the schools and schoolchildren in an entire state. Lack of clarity or rigor can be blamed on incompetence or neglect, but politicization smacks of dogmatism and propaganda. Standards are benchmarks for what students should know and be able to do, and it is unconscionable to use them as political or ideological tools (or weapons). Furthermore, nothing would more quickly and surely wreck standards-based education reform than the perception among a state's citizens that their daughters and sons are being manipulated. (Recall the debacle of "outcomes-based education.")

How politicized are today's state standards? Thankfully, not very. Most stayed focused on academics. Still, each subject revealed a few infractions.

In English, Stotsky found ten documents that emphasize using literature to study contemporary social issues. New York and Colorado have writing samples that express political bias. And a few states resort to moralizing in their standards.

One might expect history to be the subject with the greatest potential for politicization. Saxe writes:

> It isn't enough for history standards to be well written, to present necessary historical skills, and to be truthful. History must also avoid being slanted or propagandistic. . . . Programs that deliberately attempt to impart particular political dogmas or social ideologies have no place in public education. . . . Programs should not attempt to predispose children to somebody's political causes or social agenda.[30]

Two of Saxe's 15 criteria concerned the absence of such manipulation. He, too, found that most states avoided this problem, presenting history in a straightforward, balanced, and fair manner. But not all of them.

For example, in Delaware's standards, students are expected to "develop an understanding of pre-industrial United States history and its connections to Delaware history including: Three worlds meet (Beginnings to 1620)." Saxe explains that the "three worlds meet" statement is "highly suspect," an illustration of how present-day politics seeks to recast the past: "The notion that the United States was founded as a result of West Africans, Indians, and Europeans 'meeting' is a presentist theory unsupported by the historical record."

Another example can be found in Alaska's standards, which ask students to watch "films about the American

West produced from the early to the late 20th century (e.g., Broken Arrow, Little Big Man, Dances with Wolves)" and "analyze the images of Native Americans portrayed in the films." Saxe warns against such Hollywood-style history and its impact on impressionable minds. When presented with "history-based" movies, students often have difficulty separating fact from fiction.

How pervasive were such violations? Saxe found that 10 states (out of 37 evaluated) did not successfully avoid promoting political or social dogma—or only succeeded in one grade cluster (elementary, middle, or high school). And 10 states did not manage to avoid manipulating student feelings or attitudes—or only avoided that in one grade cluster. Virginia alone steered clear of both traps in all grade clusters. It is worth noting, however, that Saxe also found examples of standards that explicitly guarded against political bias, including an excellent passage from the Massachusetts standards that, through comprehensive and elucidating definitions, distinguishes among: knowledge, opinion, prejudice, stereotyping, open mindedness, narrow mindedness, and closed mindedness.

In geography, too, most states managed to keep their standards balanced and free of *a priori* value judgments. Only two jurisdictions, Missouri and Wisconsin, received low marks on this criterion, but several state standards documents were green-tinged when it came to environmental issues.

In science, except for the large and fractious issue of creationism, our author found scant evidence of bias or manipulation. One state (Mississippi) implied—probably by inadvertence—that scientific principles are race-, ethnic-, or gender-specific. Two states (Alabama and Mississippi) contradicted the principle that standards must not encourage an anti-scientific or anti-technological point of view. They evidently did so in an effort to appear environmentally correct. Still, Lerner was encouraged that most state science standards take a reasonably balanced view toward the environment, shunning the "ecopiety" that pervades some textbooks. He was also encouraged that most states embrace the universality of scientific principles. He was troubled, though, to find eight states rejecting or downplaying evolution, the central principle of the biological sciences. He faults Mississippi and Tennessee for ignoring evolution completely; Arizona, Florida, and South Carolina for treating the subject lightly and avoiding use of the "E-word"; Georgia and Kentucky for using euphemisms for evolution; and Alabama for handling the subject carelessly and evasively.

How politicized are today's state standards? Thankfully, not very. Most stayed focused on academics. Still, each subject revealed a few infractions.

6) To what extent did national standards impact state standards?

The issue of federalism is radioactive in today's education debates, and controversy surrounds the subject of national education standards. Many people are deeply opposed, arguing that children in Florida are different from children in Montana. They have different experiences, environments, and interests. That reasoning has led some to conclude that state standards are inherently superior—though one can readily see how the same logic can lead to standards set by each school district, each school, or each classroom—even for each child. Others have argued that national standards would represent a federal power grab, since states hold primary responsibility for providing people with education.

Still, national standards have been drafted, some with the cooperation of the federal government and some without. They are circulating today in each major academic subject, and we thought it important to assess the degree to which they are impacting standards at the state level.

In a couple of subjects, the answer turns out to be "quite a lot." In others, not much.

In English, the national standards were a travesty. Begun in 1991 by the National Council of Teachers of English (NCTE) and the International Reading Association, the project was de-funded by the U.S. Department of Education (after spending close to $2 million). The reason? The Department concluded that the interim draft report was devoid of anything resembling standards and ignored all the major issues it was charged with addressing. When the final document was unveiled in 1996, it was denounced by Michael Cohen, then a senior adviser to the Secretary of Education (and now a White House aide) and by the late Albert Shanker, president of the American Federation of Teachers.

A few state standards documents acknowledge the NCTE document. Most show little or no direct influence from that document—which in any case consists largely of platitudes or expressions of general "principles." Still, the educational philosophy mirrored in those principles to some degree underlies many state standards. That is not a product of direct influence by the national standards so much as an indication of the zeitgeist of the education profession with respect to English/language arts.

In history and geography, several sets of national standards are in play. The national history standards, of course, have been a political lightning rod. The first draft was widely condemned. The revised version was much

improved but still evokes widespread disagreement over its balance, objectivity, and utility. Despite this continuing controversy, Tennessee's standards followed the format of the *National History Standards: Basic Edition*, although, according to Saxe, the "standards-setters managed to remove most relevant and specific historical content and skills from the national prototype," thereby producing a document even worse than the national standards![31] Meanwhile, various drafts of the national history standards are in wide circulation, and pieces of them are showing up in textbooks and state standards nationwide, though few cite them by name.

In geography, the national standards turned out reasonably well, and as a result, many states followed their lead and borrowed liberally from their pages, typologies, etc. The problem is that there are actually several versions of national geography standards in circulation. According to Smith and Munroe, 25 states (out of the 38 they evaluated) drew upon *Geography for Life* in their documents, 18 states drew upon *Guidelines for Geographic Education*, 4 states drew upon *Expectations for Excellence*, and 3 states drew upon NAEP's 1994 *Geography Framework*.

In addition to national history and geography standards per se, national "social studies" standards are circulating that have influenced the history and geography standards of many states. Indeed, most states use a "social studies" model for their history/geography standards. This approach did not generally produce high marks from our reviewers.

In mathematics, the influence of the national standards was clearest and heaviest. The "NCTM Standards" as they have come to be called, are perhaps the best known of all the national standards. As explained earlier, some policy makers have even suggested that America needs their counterparts in other subjects. Yet the consensus that "NCTM math" once enjoyed now appears to be dissipating, most visibly in California, whose new standards can fairly be viewed as a repudiation of the NCTM approach. Still, that approach pervades most state standards documents. According to Raimi and Braden:

> The 1989 NCTM Standards . . . is comparable to almost all of the state "standards" volumes under study in this report, and in many cases is their acknowledged ancestor. . . . Its influence is manifest in most state standards. . . .[32]

In science, several sound national models exist and they don't appear to be particularly controversial. Lerner writes:

> Most of the Standards reviewed here explicitly acknowledge the influence of a number of significant national studies of curriculum. Many Standards are derived in considerable measure from these sources, having adapted them to local needs and viewpoints with varying degrees of success. Other Standards follow the form and spirit of the same models, but with considerable variation in detail. Still others take completely independent approaches.[33]

Other Voices

The grades and explanations discussed above are the authors' best shot at evaluating the "state of state standards" today. We are already aware of two other major appraisals of state standards (by the American Federation of Teachers and the Council for Basic Education). And surely there will—and should—be other voices in this crucial debate.

In order to get that discussion started, we turned to five distinguished scholars and commentators—Lynne Cheney, Denis Doyle, William Galston, Will Marshall, and Susan Traiman—and asked them to provide their thoughts in our Forum section below. The five of them certainly hold diverse political views, but they all share keen intellects, sharp analytic skills, deep knowledge of the standards movement, and a lively interest in improving American education.

IV. FORUM

We asked each of our five distinguished commentators to write a 500-word essay responding to the following question:

What are the main lessons the country should draw from the Fordham Reports (and other recent reviews and developments) as to the present condition and future prospects of standards-based education reform?

Here are their responses:

Lynne V. Cheney

Remember the national history standards? They gave center stage to Joe McCarthy with nineteen references to either him or McCarthyism. George Washington, on the other hand, appeared only fleetingly, and Paul Revere, Robert E. Lee, and Thomas Edison not at all. So biased, so disproportionately grim was the story of the American past told by the national standards that the United States Senate voted 99-1 to condemn them.

The national standards for English and language arts were such a politically correct muddle that the Department of Education defunded them after spending some $2 million on their development. More recently, the failings of the national standards for mathematics, developed by the National Council of Teachers of Mathematics, have become apparent. Because of their dictates, calculators are being handed out in kindergarten, and kids aren't becoming proficient at mental computation. Third- and fourth-graders are being told to construct their own strategies for multiplying and to write essays on how they feel about mathematics. Outraged parents say that when students who have learned NCTM math get to college, even those who have earned A's and B's sometimes end up in remedial classes.

When the educational debacles of the nineties are listed, national standards in history, English, and mathematics will surely go near the top, and this, it seems to me, is the proper context for understanding the reports on state standards that the Thomas B. Fordham Foundation has so helpfully prepared. The focus should not be on how many states are doing badly, but on the fact that some have done so well, managing to bring off what bevies of scholars and education professors, often spending bushels of federal money, could not accomplish at the national level. Virginia and Texas have history standards light-years better than the national history standards. Massachusetts's English Language Arts standards are superb, as are California's math standards.

In standard setting, as in so many other areas of educational reform, the states are leading the way. We should do nothing to interfere with their progress, as national standards and assessments would surely do.

No doubt there are many explanations for this excellence, but let me suggest just one: that parents concerned about what their children are learning (or, more likely, not learning) have greater ability to influence public opinion and to persuade policy makers at the state level than they do in the national arena. They thus become a force for common sense that is too often lacking in national debates. The California group known as Mathematically Correct is a case in point. Superbly knowledgeable, these parents were chiefly responsible for the math standards in California. No parents' group has ever had such influence in the development of national standards.

What the Fordham Reports show is that in standard setting, as in so many other areas of educational reform, the states are leading the way. We should do nothing to interfere with their progress, as national standards and assessments would surely do. We should do everything we can to encourage the good work going on in states such as Arizona, California, and Texas and to hold it up as a model for all.

Washington, D.C.
May 1998

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Denis P. Doyle

What are the main lessons the country should draw from the Fordham Reports as to the prospects for standards-based reform? In education reform, as in politics, eternal vigilance is the price of liberty. Standards-based reform is the most promising—and most demanding—education initiative of the century. In addition to prodigies of effort to bring about, it will require continuing, external oversight.

Standards-based reform is the most promising—and most demanding—education initiative of the century.

First, it is the most promising education initiative because, taken seriously, it can undo more than fifty years of mischief caused by life-adjustment education. The hard truth is that personal accomplishment and economic well-being are the product of disciplined intelligence. So, too, is self-esteem (a desirable state to be sure); it is earned, not conferred, and demanding schools are a crucial part of the process. What people know and are able to do determine what they do, how well they do it, and how well off they are. Emphasizing academic performance, then, restores the historic mission of the schools and positions them and their graduates for the knowledge-based world of the next century.

Second, it is the most demanding education initiative because it requires a complete transformation in thinking and doing when it comes to schooling. To use an overworked term, it calls for a "culture shift." In a standards-based system, students become workers, teachers become managers of instruction, and mastery becomes the school's metric. No longer will time in the saddle suffice; in a standards-based system, diplomas will be earned the old-fashioned way, by hard work.

But working harder, important as that may be, is not sufficient. Schools, and the people in them, must also work smarter. They must change the ways they do things. Just as time must become the flexible variable, technology must be used to gain intellectual leverage; it must be treated as a productivity enhancer, not as an end in itself. And as the uses of time and technology change, teaching and learning will change as well. A new triptych must emerge: Standards set, standards met, consequences. All healthy organizations have standards for performance; the standards are subject to even-handed measurement, and the organization is held to them. It is at once that simple and that demanding.

Third, it will take prodigious effort to bring about because schools are supremely lethargic institutions. As protected monopolies and bureaucracies, they are extremely difficult to change, from either the inside or outside. Indeed, they will only change when they want—or are obliged—to change, the result of both external pressure and internal resolve.

Finally, the Fordham Foundation's national oversight is essential to success because it provides a common yardstick to measure progress (or lack thereof) that both insiders and outsiders must use. When thoughtful and useful oversight mechanisms are available to the public, schools can run but they cannot hide. When they are available to educators, expectations will be clear and professional satisfaction high. When students have them, there will be no more excuses.

Indeed, without such oversight, standards-based reform would become one more casualty in the education reform war. It would quietly slip beneath the waves. If the Fordham Reports (and the AFT and CBE reports) did not exist, someone would have to invent them. Without them—or something very much like them—standards-based reform would falter and eventually fail. With them we have reason to be cautiously optimistic about the future.

Chevy Chase, Maryland
May 1998

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William Galston

If the British can do it, why can't we?

Public education has improved modestly since its nadir in the early 1980s. More high school students are completing a basic academic curriculum; increased choice—especially through charter schools—has begun to spur innovation; and most states are setting new content standards in core academic subjects.

That's the good news. The bad news is that a decade after the drive for standards attained national visibility and four years after the enactment of Goals 2000, progress toward world-class standards is halting at best. As the Fordham Reports demonstrate, the majority of state standards in every subject are mediocre or worse. Too many reflect a deliberate refusal to establish clear priorities and make hard choices. Some even conflate educational inputs and outputs, a distinction fundamental to the standards movement.

Still, there are grounds for hope. More than half the states managed a B or better in at least one subject. For every subject studied, at least one state has created model standards. The level of overt politicization is low. And most important, it appears to me that state-level resistance to sound standards is not so intense as to preclude further progress.

Here's the evidence on which I base this judgment.

The authors of this report focus on the differences among states, which are certainly significant. But I'm struck by the diversity within states. Of the 43 states that have established standards in three or more subjects, 32 have a gap of two letter grades or more between their best and worst standards. Remarkably, six states that were awarded "A's" in some subjects received "F's" in others. This suggests that the standard-setting process is governed by a myriad of small local factors rather than any single dynamic that determines success or failure. Over time, this loose-jointed situation may well offer opportunities to promote better outcomes.

One strategy would be to select model standards in each of the five subjects and publish them, in full, in a single volume accompanied by a clear exposition of the criteria by which these standards are judged exemplary. My personal choices would be the Massachusetts English standards, Virginia history standards, Texas geography standards, California mathematics standards, and New Jersey science standards. These are large, demographically diverse states from across the country. Their successes suggest that there are no permanent obstacles to rigorous standards anywhere. This volume could then be used as the basis of a national (but not federal) effort to breathe new life into the standards movement. The National Governors Association might be willing to take the lead in this endeavor.

Those of us who care about better standards must keep reminding ourselves that success is indeed possible. Some time ago I had occasion to examine the standards created in the United Kingdom during their recent reform efforts. They are models of lucidity and concision. In less than two hundred pages, specific goals for teaching and learning are laid out, grade by grade, for every subject. Every student who achieves these goals is prepared for post-secondary education or for employment in the increasingly demanding global economy. These standards were not created without controversy, but they now enjoy support across the political spectrum. If the British can do it, why can't we?

College Park, Maryland
May 1998

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Will Marshall

In grading state education standards, and finding them wanting, the Fordham Foundation has performed a great public service. Its unblinking assessments are an important milestone on the way toward a 21st century school system that demands higher levels of performance from everyone—administrators and teachers, parents and children. These reports should reinforce the public's growing conviction that the key to fixing our schools is not spending more but raising standards and, as the late Albert Shanker tirelessly reminded us, insisting on real consequences for those who fail to meet them.

The Fordham Reports yield two broad and sobering conclusions about the state of America's antiquated public school system. First, the content standards adopted by most states in the 1990s are woefully inadequate. Second, we still don't have a national consensus on what all students should know.

The Fordham Reports yield two broad and sobering conclusions about the state of America's antiquated public school system. First, the content standards adopted by most states in the 1990s are woefully inadequate: Not a single state's standards scored straight "A's" and only three earned a "B" average. Second, 15 years after the seminal *Nation at Risk* report, and after education summits between Presidents Bush and Clinton and the nation's governors, we still don't have a national consensus on what all students should know. At the time of these reviews, only 18 states had even established standards for all five core subjects identified by the 1989 Charlottesville summit: English, history, math, science, and geography.

Fordham's state-by-state reviews illuminate another disturbing reality: The education too many of our kids receive is virtually "content free." Many states' standards are exceedingly vague about what students should learn, either out of fear of sparking ideological battles over curriculum or of violating the sacred tenet of "local control." Others confuse educational means and ends, stressing ways students can find information rather than specifying the actual body of knowledge they should acquire. Only a handful of states, for example, have English standards that require students to delve deeply into American literature. This means that many of our public schools, in thrall to pedagogical fads and cultural relativism, are depriving our children of their cultural inheritance.

Still, the fact that most states have created standards that can be subjected to rigorous scrutiny represents real progress. The school reform debate, after exhausting almost every conceivable alternative, seems finally to have lurched to the conclusion that everything depends on measuring outcomes. This is a welcome departure from the education establishment's self-serving fixation on such inputs as per-pupil spending, higher pay for teachers and, the bipartisan fad du jour, smaller class sizes. Without the ability to measure actual student performance, there's no way to tell if any approach to reform is working. And without common standards and assessments based on them, we have no credible metric for judging how well our students and their teachers are doing.

Information is a powerful stimulus to reform. If widely publicized, the Fordham results could spur healthy competition among the states to raise their grades by making their standards clearer and more challenging and by developing rigorous standards for all five core subjects. By identifying the specific attributes that distinguish strong from weak standards, these studies give laggards models to emulate.

Lifting state standards, however, is not the end of the matter. Implicit in Fordham's finding of wide variations in the quality of state standards is the need for a common yardstick for evaluating student performance *anywhere in the U.S.* That is why we need national—not federal, but nationwide—benchmarks against which to measure and compare the performance of students across state and even district lines. And, because Americans today must compete in a global marketplace, it is essential that our education standards be at least as demanding as those of other advanced nations.

The Fordham Reports indicate that we have a long way to go before reaching these essential goals, but they also show us how to get there.

Washington, D.C.
May 1998

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Susan Traiman

Rigorous, measurable standards for what students should know and be able to do are the centerpiece of the state education reform agenda adopted by The Business Roundtable in 1990. After nearly a decade of effort, the resulting state standards are disappointing, as the Fordham Reports and other recent reviews make plain. But before we abandon standards and the associated reforms that will be based on them, let's acknowledge many encouraging signs. The process of developing both national and state standards focused attention on academic content and academic expectations in states and communities across the country. It involved a wide range of citizens in discussing priorities for academic learning. And there is evidence in some states and districts that setting high standards, teaching to them, and holding students and schools accountable for reaching them, produces measurable improvements in student achievement.

Standards, however good or mediocre or bad, are not what counts. What makes a state's standards real are the content and performance expectations that actually get included on state tests, especially tests with consequences for schools and students.

There is a saying at one of The Business Roundtable's member companies: "The checker gets what the checker checks." I mention that in the context of this discussion of the "state of state standards" because standards, however good or mediocre or bad, are not what counts. What makes a state's standards real are the content and performance expectations that actually get included on state tests, especially tests with consequences for schools and students. We must not get endlessly stuck in the process of perfecting standards, a process that dooms standards-based reform to a state of paralysis.

States can now quickly analyze their own standards against the reviews and determine the extent to which they agree or disagree with the various critiques. In addition to this mix, they should look as much as possible at academic expectations in those countries that outperform the U.S. on international assessments. Governors also should take advantage of a new service offered by Achieve to benchmark their standards and assessments. Business leaders must press for quick action and guard against two possibilities. First, many states invested so much time and energy in gaining consensus for their current standards documents that they are reluctant to go back to the drawing board for fear of re-opening Pandora's box. Second, states that do attempt to revise their standards may lose sight of the fact that our goal is *achieving standards*, not setting them. We must cultivate a culture of continuous improvement which assumes that both standards and assessments will change and improve over time.

To those who waver about the prospects of standards-based reform after reading disheartening reviews of state standards, I ask two questions: Are we better off with the standards states have produced thus far than the minimum competency requirements that preceded them? Are they an improvement over the eighth-grade expectations on which the high school diploma is based for most students? There's no doubt that the current course of standards-based reform, however bumpy, is the correct one. Recall any defective products, but repair them quickly. Move on to measure progress with high-quality assessments. Although the present condition of state standards may be flabby, future prospects for fitness are good.

Washington, D.C.
May 1998

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V. CONCLUSION

The present "state of state standards" is bleaker than we had hoped—and than the country needs. Too many standards are vague. Too many are hostile to knowledge and infatuated with "cognitive skills." Most are entranced by "relevance" to students' lives, effectively subordinating education to current events and contemporary culture. And many confuse classroom means with educational ends—drifting too deeply into curricular and pedagogical waters and neglecting clarity with respect to the necessary results. Scores of states have spent millions of dollars and thousands of hours to create shabby—and in some cases utterly useless—documents.

Does this mean that the standards movement has failed? Absolutely not. There are strong signs of hope, signs that American education is finally awakening to the need for rigorous standards, real assessments, and tough-minded accountability systems.

The present "state of state standards" is bleaker than we had hoped—and than the country needs. Does this mean that the standards movement has failed? Absolutely not.

As Lynne Cheney points out in her Forum essay, in every subject we found a few states that produced excellent standards (especially Massachusetts in English, Virginia in history, Colorado in geography, California in math, and Indiana in science). These can and should serve as exemplars, as models for other states seeking to improve their own standards. They prove that clear, rigorous, challenging standards can be written. In this sense, the state standards movement has a leg up on its national counterpart.

We assume that state standards will improve over time. Several of the documents reported on herein have already been superseded, and usually strengthened. States will learn from each other. They can also use national, international, or commercial models, such as the Core Knowledge standards, the New Standards Project, or the standards of other countries. Japan's math standards come to mind. And Bill Galston commends the United Kingdom's standards to American attention.

As Denis Doyle argues, critiques of existing standards are essential to their improvement. Like report cards for students, appraisals of state standards close the feedback loop and provide guidance for improvement. Of course, the Thomas B. Fordham Foundation is not the only organization that has recently "graded" state academic standards. Some readers profess to be "confused" by the different ratings—and some have explained low marks from one rater by citing the more bullish findings of another. Still, we're convinced that multiple analyses are mostly good for the standards movement, just as multiple reviews are good for the consumers of motion pictures, books, and restaurants. We are neither disappointed nor surprised that people reach different judgments about what makes for good academic standards. Such differing opinions, though perhaps confusing, are necessary for vigorous democracy and for the free play of ideas. States that want some "consensus" magically to emerge from "the field" are engaging in wishful thinking. States need to decide what's important for their children to learn. And they must be ready for disagreement. As the standards movement grows beyond its infancy, perhaps greater unanimity will emerge, at least with respect to the appropriate criteria for state academic standards. We look forward to that, and intend to stay involved.

Getting the "content standards" right, of course, is just the beginning. Susan Traiman persuasively argues that the difficult and essential work lies ahead: in setting the performance standards, writing the assessments, and creating the accountability architecture. Standards without teeth are platitudes, not engines for reform.

How will states know if they are improving? How will we know if we're on the right track? The governors have begun to wrestle that beast. They launched a new national organization, Achieve, to benchmark standards and assessments. This is likely to be helpful. And yet the most important evidence is in student achievement. Are kids learning more? Which states are making the greatest progress?

The only way to answer those questions is with an independent audit, a national yardstick, a gauge that enables states' performances to be compared with each other, with the country as a whole, and with the rest of the world. Yes, we're talking about some form of national—*but not federal*—standards and tests. As Will Marshall forcefully explains, we cannot know if we are making progress as a nation if we don't know where we are starting from and where we are going. Similarly, states will not know whether they are on the right path unless they have objective measures of their progress.

The recently released *Third International Mathematics and Science Study* provided an avalanche of data about America's schools in comparison with the industrial world. It was immensely useful to compare student achievement in the United States with international benchmarks and

with the performance of students in other nations. We learned, for example, that our fourth graders do quite well in math and science while our twelfth graders do horribly. Without the "independent audit" furnished by TIMSS, we wouldn't know that. States, too, need such data, based on independent standards, decent tests, and comparative analyses.

We believe it's worth another try at national standards. We've learned a lot over the past five years about how to do it right (and wrong), and several states have already given us models of excellence, as have several other countries. There must, however, be a firewall between the standards-setters, test-givers, and data analysts, on the one hand, and politics, curricular fads, and interest groups on the other hand. Properly reconstituted, the National Assessment Governing Board (NAGB) could do this task well. Perhaps others could, too.

Writing good national standards, just like good state standards, takes vigilance. National tests, too, are tricky things to do right. The process could easily be co-opted—as began to happen with President Clinton's proposed "voluntary national tests" before the test development process was entrusted to NAGB. But yesterday's failures do not warrant despairing about what might be done tomorrow. It took Salk years of painstaking research before he created the polio vaccine. Lincoln was defeated for state legislator, Speaker, nomination (and renomination) for Congress, U.S. Senate (twice), and nomination for vice president before he was elected president.

False starts and stumbles are inevitable. Democratic government implies such risks. We think it's worth the risk, and we hope that our children will not have to endure more half-hearted or misguided attempts before we get it right. Meanwhile, the old national standards are floating around out there, affecting classroom lessons, textbooks, teacher training programs, and state standards, mainly for ill. Isn't it time to replace them with world-class standards of excellence?

We think it is, and we offer three recommendations to make this happen:

- Use the best state (and international) standards available as models to write rigorous, specific state standards of learning that delineate essential knowledge and skills;

- Create and adopt national standards—under the auspices of an organization independent from politics, fads, and interest groups—as well as voluntary national tests keyed to those standards;

- Remain vigilant about the standards-setting process and include citizens at all stages.

The "state of state standards" may be bleak, yet there is reason for hope. Fifteen years ago, when we were declared *A Nation at Risk*, standards were non-existent and standards-based reform was a concept that few understood. Today, we have some solid standards and a widening consensus that standards-based reform is the kind of reform that U.S. education needs—and a necessary complement to reinventing public education. Yes, there's some blood on the floor. But there is progress, too. We might even be winning.

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APPENDIX I: CRITERIA FOR REVIEWING STATE STANDARDS

State English Language-Arts/Reading Standards

The English/Language-Arts standards appraisal employed 34 criteria in 5 categories. To refer to the original, see Sandra Stotsky, *State English Standards: An Appraisal of English Language-Arts/Reading Standards in 28 States*, Fordham Report Vol. 1, No. 1, July 1997, pp. 2-3.

A. Purpose, audience, expectations, and assumptions of the standards document(s)

1. The document is written in clear English prose, for the general public as well as for educators.
2. It assumes that English is the language to be used in English language-arts classes, and the only language to be used.
3. It expects all students to demonstrate use of standard English, orally and in writing.
4. It acknowledges the existence of a corpus of literary works called American literature, however diverse its origins and the social groups it portrays.
5. It expects students to become literate American citizens.
6. It expects explicit and systematic instruction in decoding skills in the primary grades as well as the use of meaningful reading materials.
7. It expects students to do regular independent reading through the grades, suggesting how much reading students should do per year as a minimum, with some guidance about its quality.
8. It expects the standards to serve as the basis for clear and reliable statewide assessments.

B. Organization of the standards

1. They are presented grade by grade or in clusters of no more than 3 to 4 grade levels.
2. They are grouped in categories reflecting coherent bodies of scholarship or research in the English language arts.
3. They distinguish higher-order knowledge and skills from lower-order skills, if lower-level skills are mentioned.

C. Disciplinary coverage of the standards

1. The standards clearly address listening and speaking. They include use of various discussion purposes and roles, how to participate in discussion, desirable qualities in formal speaking, and use of established as well as peer-generated or personal criteria for evaluating formal and informal speech.
2. The standards clearly address reading (and viewing) to understand and use information through the grades. They include progressive development of reading skills and a reading vocabulary, and knowledge and use of a variety of textual features, genres, and reading strategies for academic, occupational, and civic purposes.
3. The standards clearly address the reading (or viewing), interpretation, and critical evaluation of literature. They include knowledge of diverse literary elements and genres, different kinds of literary responses, and use of a variety of interpretive and critical lenses. They also specify those key authors, works, and literary traditions in American literature and in the literary and civic heritage of English-speaking people that all students should study because of their literary quality and cultural significance.
4. The standards clearly address writing for communication and personal expression. They require familiarity with writing processes, established as well as peer-generated or personal evaluation criteria, and various rhetorical elements, strategies, genres, and modes of organization.
5. The standards clearly address oral and written language conventions. They require the use of standard English conventions for sentence structure, spelling, usage, penmanship, capitalization, and punctuation.
6. The standards clearly address the nature, dynamics, and history of the English language. They cover the nature of its vocabulary, its structure (grammar), the evolution of its oral and written forms, and the distinction between the variability of its oral forms and the relative permanence of its written form today.
7. The standards clearly address research processes, including developing questions and locating, understanding, evaluating, synthesizing, and using various sources of information for reading, writing, and speaking assignments. These sources include dictionaries, thesauruses, other reference materials, observations of empirical phenomena, interviews with informants, and computer data bases.

D. Quality of the standards

1. They are clear.
2. They are specific.
3. They are measurable (i.e., they can lead to observable, comparable results across students and schools).
4. They are comprehensive.
5. They are demanding:
   a. They are of increasing intellectual difficulty at each higher educational level and cover all important indices of learning in the area they address.
   b. They index or illustrate growth through the grades for reading by referring to specific reading levels or to titles of specific literary or academic works as examples of a reading level.
   c. They illustrate growth through the grades for writing with writing samples.
   d. For other subdisciplines, they provide examples of specific reading, writing, or oral language features, activities, or assignments that clarify what is expected for each standard or benchmark.
6. Their overall contents are sufficiently specific, comprehensive, and demanding to lead to a common core of high academic expectations for all students in the state, no matter what school they attend.

E. Anti-Literary or Anti-Academic Requirements or Expectations: Negative Criteria

1. The document implies that the literary or popular culture of our or any other country is monolithic in nature.
2. The reading/literature standards require students to relate what they read to their lived experiences.

3. The reading/literature standards want reading materials to address contemporary social issues.
4. The document implies that all literary and nonliterary texts are susceptible of an infinite number of interpretations and that all points of view or interpretations are equally valid regardless of the logic, accuracy, and adequacy of the supporting evidence.
5. The examples of classroom activities or student writing offered are politically slanted or reflect an attempt to manipulate students' feelings, thinking, or behavior.
6. The standards teach moral or social dogma.
7. The document explicitly or implicitly recommends one instructional approach for all teachers to follow.

State History Standards

The history standards appraisal employed 15 criteria in 5 categories. To refer to the original, see David Warren Saxe, *State History Standards: An Appraisal of History Standards in 37 States and the District of Columbia*, Fordham Report Vol. 2, No. 1, February 1998, p. 2.

A. Clarity: How well are the standards written?

1. Standards are clear and measurable.
2. Standards describe what is to be taught and learned.
3. Standards are coherent and demanding.
4. Students are expected to learn important and specific facts, events, individuals, and issues.

B. Organization: How are standards organized and linked to state assessments?

1. Standards are presented on a grade-by-grade basis.
2. State history tests are (or could be) based on the standards.

C. Historical Soundness: What is the nature and quality of history found in the standards?

1. History is based on chronology.
2. Standards reflect solid, warranted historical knowledge.
3. History is kept in context and standards avoid presentism.
4. Students are encouraged to develop and apply historical skills.
5. Students are encouraged to understand and use primary and secondary sources.

D. Historical Content: Are specific studies of United States, European, and world history found in the standards?

1. Standards include specific studies in United States history.
2. Standards include specific studies in European and world history.

E. Absence of Manipulation: Do standards avoid manipulation, bias, indoctrination, and/or inappropriate applications of history?

1. Standards avoid promoting political or social dogma.
2. Standards avoid manipulating student feelings or attitudes.

State Geography Standards

The geography standards appraisal gave scores for two categories: 1) general characteristics, and 2) comprehensiveness and rigor. To refer to the original, see Susan Munroe and Terry Smith, *State Geography Standards: An Appraisal of Geography Standards in 38 States and the District of Columbia*, Fordham Report Vol. 2, No. 2, February 1998, pp. 63-67.

General Characteristics

Standards were first judged against six general criteria that are not specific to geography but contribute to the likelihood that standards will be understood and used.

1. Standards are clearly written and jargon-free.
2. Standards are specific regarding the knowledge and skills students must learn and use.
3. Standards are balanced such that they do not attempt to sway students towards any particular moral or social point of view.
4. Standards employ strong verbs such as analyze, compare, demonstrate, describe, evaluate, explain, identify, illustrate, locate, make, trace, utilize, etc.
5. Standards incorporate benchmarks—specific activities by which students may demonstrate their mastery of the standard.
6. Standards offer guidance to teachers in developing curriculum activities, classroom materials, and instructional methods.

Comprehensiveness and Rigor

Standards were judged in each of three grade clusters (K-4, 5-8, and 9-12) for the comprehensiveness and rigor with which they present the essential content, skills, and applications of geography and for their overall organization. Evaluators used the same criteria for each grade cluster but looked for increasingly advanced material as they progressed to higher grades.

Geography Content (Five Criteria)

1. *The World in Spatial Terms* (Fundamentals of Geography): characteristics and uses of maps (including mental maps) and other geographic representations, tools, and technologies; knowledge of Earth to locate people, places, and environments; knowledge of geographic vocabulary and concepts necessary for analysis of spatial organization of people, places, and environments on Earth's surface.
2. *Places and Regions*: the physical and human characteristics of places; the fact that people create regions to interpret Earth's complexity; the way culture and experience influence people's perceptions of places and regions.
3. *Physical Systems*: the physical processes that shape the patterns of Earth's surface; the characteristics and distribution of ecosystems on Earth's surface.
4. *Human Systems*: the characteristics, distribution, and migration of human populations; the characteristics, distribution, and complexity of Earth's cultures; the patterns and networks of economic interdependence; the processes, patterns, and functions of human settlement; the way forces of cooperation and conflict among people influence the division and control of Earth's surface.
5. *Environment and Society*: the way human actions modify the physical environment; the way physical systems affect human systems; the changes that occur in the meaning, use, distribution, and importance of resources.

Geography Skills (One Criterion)

1. *Skills of Geographic Analysis (higher order use of basic geography knowledge)*: asking and answering geographic questions; acquiring, organizing, analyzing, and presenting geographic information; developing and testing geographic generalizations.

Geography Applications (One Criterion)

1. *Applications of Geography*: applying geographic perspectives to interpret the past and the present, and to plan for the future.

Overall Organization (One Criterion)

1. *Overall Organization*: presentation of a continuum of content knowledge, skills, and applications within the grade cluster.

State Mathematics Standards

The math standards appraisal employed nine criteria in four groups. To refer to the original, see Ralph A. Raimi and Lawrence S. Braden, *State Mathematics Standards: An Appraisal of Math Standards in 46 States, the District of Columbia, and Japan*, Fordham Report Vol. 2, No. 3, March 1998, pp. 8-11.

I. Clarity: the success the document has in achieving its own purpose.

A. The words and sentences themselves must be understandable, syntactically unambiguous, and without needless jargon.
B. What the language says should be mathematically and pedagogically definite, leaving no doubt of what the inner and outer boundaries are, of what is being asked of the student or teacher.
C. Testability of the lessons as described.

II. Content: is the state asking K-12 instruction in mathematics to contain the right things, and in the right amount and pacing?

A. Adequacy of Primary school content (K-6, approximately)
B. Adequacy of Middle school content (grades 7-9, approximately)
C. Adequacy of Secondary school content (grades 10-12, approximately)

III. Mathematical Reasoning: do the standards as a whole and throughout demand attention to the structural organization by which the parts of mathematics are connected to each other?

IV. Negative Qualities: the presence of unfortunate features of the document that injure its intent or alienate the reader to no good purpose or, if taken seriously, will tend to cause that reader to deviate from what otherwise good, clear advice the document contains.

A. False Doctrine: Demands in the standards that are injurious to the correct transmission of mathematical information, including: excessive reliance on calculators, excessive emphases on "real-world problems," the fashionable notion that a mathematical question may have a multitude of different valid answers, as well as the occurrence of plain mathematical error.
B. Inflation: Bloated or pretentious prose, repetitiousness, evidence of mathematical ignorance, bureaucratic jargon, empty pronouncements, and other irrelevancies.

State Science Standards

The science standards appraisal employed 25 criteria in 5 categories. To refer to the original, see Lawrence S. Lerner, *State Science Standards: An Appraisal of Science Standards in 36 States*, Fordham Report Vol. 2, No. 4, March 1998, pp. 3-4.

A. Purpose, expectations, and audience

1. The standards document expects students to become scientifically literate, at depths appropriate to their grade levels.
2. The document can serve as the basis for clear and reliable statewide assessments of student learning and skills acquisition, both theoretical and practical.
3. The document is clear, complete, and comprehensible to all interested audiences: educators, subject experts, policy makers, and the general public.
4. The document expects student written work to be presented clearly in standard English and, where called for, in acceptable mathematical language. It expects student oral presentations to be clear, well organized, logical, and to the point.

B. Organization

1. The standards are presented grade-by-grade or in clusters of no more than three to four grade levels.
2. They are grouped in categories reflecting the fundamental theoretical structures underlying the various sciences.
3. They pay proper attention to the elementary skills of simple observation and data gathering, the interpretation of systematic observations, and the design of experiments on the basis of a theoretical framework.

C. Coverage and Content

1. The standards address the experimental and observational basis of the sciences, and provide for substantial laboratory and/or field experience in the sciences. Replication of important classical experiments is encouraged. The primacy of evidence over preconception is made clear.
2. The standards stress the importance of clear, unambiguous terminology and rigorous definition. Such terms as energy, mass, valence, pH, genotype, natural selection, cell, metabolism, continental drift, magnetic reversal, and cosmic background radiation are defined as rigorously as possible at the grade level concerned.
3. The standards address such issues as data analysis, experimental error, reliability of data, and the procedures used to optimize the quality of raw information. The stringent criteria for acceptance of data are made clear.
4. The standards expect students to master the techniques of presentation and interpretation of tabular and graphical data at increasingly sophisticated levels.
5. The standards address the need for systematic, critical interpretation of experimental/observational data within the framework of accepted theory. The continual interplay between data and theory, and the rejection or remeasurement

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of data and modification of theory where necessary, are stressed at all grade levels, commensurate with the students' degree of maturity. The nature and role of scientific revolutions, and how or when they occur (or do not occur), are part of the curriculum for students sufficiently advanced to appreciate the issues involved.

6. The basic underlying principles of all the sciences are stressed. Examples include Newton's laws, conservation laws, and the microscopic/macroscopic connection in physics; the evolution of the universe and the structure of its parts (including the solar system) in astronomy; plate tectonics in geology; the roles of mass and energy conservation and the nature of the chemical bond in chemistry; and evolution and the molecular basis of life in biology. At the elementary levels, these principles may be exemplified by such observations as buoyancy, plant tropisms, and the gross structure of cells.
7. The increasing ability of students to grasp abstractions and generalizations is taken into account. The broad, less structured knowledge base laid in the early grades is consistently and methodically built up on the basis of progressively more sophisticated theoretical treatment as the students mature.
8. The standards emphasize the need to set forth the general methodologies of the sciences, but do not oversimplify this need into an artificial package called "*the* scientific method." The underlying commonalities of the sciences, as well as the distinctions among them, are made clear.
9. The standards consider the two-way relationships between science and technology, and between science and broader world views, and the way that science has helped to shape society. The standards stress the fact that science is intellectually satisfying as well as socially useful. A common interest in science can act as a strong unifying force among people who differ widely in other ways.

D. Quality

1. The standards are unambiguous and appropriate; that is, their meaning is straightforward and to the point.
2. They are specific but flexible; that is, they are neither so broad as to be vague nor so narrow as to be trivial.
3. They comprehensively cover basic knowledge, the importance of which is generally agreed upon by the scientific community; they are not, however, encyclopedic.
4. Standards are demanding:
   a. They expect increasing intellectual sophistication and higher levels of abstraction, as well as the skills required to deal with increasingly complex arrays of information, at successively higher educational levels. In light of the tight logical structure of the sciences, it is especially important that the standards also expect the knowledge gained by students to be cumulative, each level building on what has been mastered earlier.
   b. Their overall contents are sufficiently specific and comprehensive to underlie a common core of understanding of science for all students in all the schools of the state. They are sufficiently demanding to ensure that this common core comprises understanding of the basic principles of all the sciences, and of their methodologies.

E. Negatives

1. The standards must not accept as scientific, or encourage, pseudoscientific or scientifically discredited constructs such as quack medical doctrines (e.g., homeopathy, foot reflexology), vaguely defined "energy fields" or "auras," creationism and other nonscientific cosmologies, UFO visits, astrology, or mysterious "life forces."
2. The standards must not imply that scientific principles are race-, ethnic-, or gender-specific, or distort the history of science to promote racial-, ethnic-, or gender-based positions.
3. The standards must not confuse science with technology.
4. The standards must not encourage an antiscientific or antitechnological world-view.

APPENDIX II: THE DOCUMENTS EXAMINED

Note: The Fordham Foundation is well aware that many of the documents examined have since been replaced or revised. While we cannot update our original reports, we have included below a detailed list of the actual documents reviewed.

Alabama

English/Language Arts
Alabama Course of Study: English Language Arts, September 1993

History
Alabama Course of Study: Social Studies, Draft, received December 1997

Geography
Alabama Course of Study: Social Studies, Draft, 1997

Math
Alabama Course of Study: MATHEMATICS. Mathematical Power K-12 (Alabama State Department of Education Bulletin 1997, No. 4)

Science
Alabama Course of Study: Scientific Literacy (Alabama State Department of Education, Bulletin 1995, No. 4)

Alaska

English/Language Arts
Standards were not available or were not reviewed.

History
Alaska Content Standards: History, Draft, received August 4, 1997

Geography
Alaska Social Studies Framework: Using Standards to Build Educational Excellence, December 1996

Mathematics
(1) *Math/Science Framework*, 1996
(2) *Mathematics Performance Standards*, 1997

Science
No standards were available for review.

Arizona

English/Language Arts
(1) *The Language Arts Essential Skills*, February 1989
(2) *Language Arts Standards (Reading and Writing)*, August 1996

History
No standards were available for review.

Geography
Ibid.

Mathematics
Mathematics Performance Objectives, August 1996

Science
Arizona Academic Standards: Arizona Student Achievement Program, 1997

Arkansas

English/Language Arts
Standards were not available or were not reviewed.

History
Curriculum Frameworks: Social Studies, Draft, received May 1997

Geography
Curriculum Frameworks: Social Studies, 1996

Mathematics
Mathematics Framework, downloaded July 1997

Science
Science Curriculum Framework, undated

California

English/Language Arts
Standards were not available or were not reviewed.

History
(1) *History-Social Science Standards*, Draft, 1995
(2) *California History-Social Science Framework*, 1996

Geography
History-Social Science Challenge Standards for Student Success, Third Draft Interim Content and Performance Standards, Draft, 1997

Mathematics
The California MATHEMATICS Academic Content Standards for Grades K-12, Prepublication Edition, January 1998

Science
Science Framework for California Public Schools, Kindergarten Through Grade Twelve, 1990

Colorado

English/Language Arts
Model Content Standards: Reading and Writing, Summer 1996

History
Model Content Standards for History, September 1995

Geography
Mapping Out a Standards-Based Framework for GEOGRAPHY—The Colorado Geography Curriculum Framework, 1995

Mathematics
Model Content Standards, June 1995

Science
Ibid.

Connecticut

English/Language Arts
Standards were not available or were not reviewed.

History
Social Studies Curriculum Framework, Second Draft, August 1997

Geography
(1) Ibid.
(2) *Guide to K-12 Programs Development in Social Studies*, First Draft, April 1997

Mathematics
Mathematics Curriculum Framework, Second Draft, August 1997

Science
Science Curriculum Framework, Second Draft, August 1997

Delaware

English/Language Arts
(1) *New Directions: English Language Arts Curriculum Framework, Volume I: Content Standards*, June 1995
(2) *New Directions: English Language Arts Curriculum Framework, Volume II: Classroom Performance Models*, August 1995

History
New Directions: Social Studies Curriculum Framework Content Standards, Draft, June 1996

Geography
(1) *New Directions: Social Studies Curriculum Framework*, June 1995
(2) *Volume Two: Classroom Performance Models*, August 1995

Mathematics
Mathematics Curriculum Framework, Vol. 1 Content Standards, 1995, revised March 1996

Science
Untitled, undated document (Downloaded from http://www.dpi.state.de.us/standard/science/sstand.html)

District of Columbia

English/Language Arts
Standards were not available or were not reviewed.

History
English Language Arts and History: Curriculum Framework, Draft, July 1996

Geography
Geography Content Standards, Working Draft, May 1996

Mathematics
Mathematics-Science-Technology Curriculum Framework, Grades K-12, Revised Edition (undated, but post-1989)

Science
No standards were available for review.

Florida

English/Language Arts
(1) *Sunshine State Standards, PreK-12 Language Arts*, 1996
(2) *Florida Curriculum Framework: Sunshine State Standards and Instructional Practices, PreK-12 Language Arts*, 1997

History
Sunshine State Standards, Social Studies, May 1996

Geography
Ibid.

Mathematics
(1) *Sunshine State Standards and Instructional Practices, Mathematics*, 1996
(2) Florida Course Descriptions, Grades 6-12, 1997

Science
Sunshine State Standards and Instructional Practices, Science, 1996

Georgia

English/Language Arts
Quality Core Curriculum: Language Arts, Draft Revision, January 1997

History
Quality Core Curriculum: Social Studies, Draft, received July 1997

Geography
Quality Core Curriculum: Social Studies K-12, 1997

Mathematics
Quality Core Curriculum: Mathematics, Draft Revision, Edition 2, "provided by the Georgia School Improvement Panel, February 1997"

Science
No standards were available for review.

Hawaii

English/Language Arts
State Commission on Performance Standards: Language Arts, June 1994

History
No standards were available for review.

Geography
Ibid.

Mathematics
(1) *State Commission on Performance Standards, Final Report*, June 1994
(2) *Essential Content*, December 1992

Science
Essential Content, December 1992

Idaho

English/Language Arts
K-12 English Language Arts Content Guide and Framework, 1994

History
No standards were available for review.

Geography
(1) *K-12 Social Studies Content Guide and Framework*, 1994
(2) *Skills Based Scope and Sequence Guide, Social Studies K-6, Target Skills & Sample Assessment Methods*, 1997

Mathematics
K-12 Mathematics Content Guide and Framework, 1994

Science
K-12 Science Content Guide and Framework, Undated

Illinois

English/Language Arts
Illinois Academic Standards: English Language Arts, Preliminary Draft, 1996

History
Illinois Learning Standards: Social Science, Draft, June 1997

Geography
Illinois Learning Standards, July 1997

Mathematics
Ibid.

Science
Ibid.

Indiana

English/Language Arts
English Language Arts Proficiency Guide: Essential Skills for Indiana Students, Spring 1992

History
Social Studies Proficiency Guide: An Aid to Curriculum Development, 1996

Geography
Ibid.

Mathematics
Mathematics Proficiency Guide, Spring 1997

Science
(1) *Science Proficiency Guide*, 1995
(2) *Indiana High School Competencies*, 1995

Iowa

Iowa does not intend to write state standards.

Kansas

English/Language Arts
Curriculum Standards for Communication Arts, July 1996

History
Curricular Standards for Social Studies, 1996

Geography
Curricular Standards for Social Studies, 1996 (Amended and reprinted, 1997)

Mathematics
Mathematics Curriculum Standards, Revised July 1993 (reprinted October 1996)

Science
Curriculum Standards for Science, 1995

Kentucky

English/Language Arts
Standards were not available or were not reviewed.

History
Learning Goals and Academic Expectations (Social Studies), 1994

Geography
Core Content for Social Studies Assessment, 1994

Mathematics
Core Content for Mathematics Assessment, 1994

Science
Learning Goals and Academic Expectations (Science), 1994

Louisiana

English/Language Arts
Standards were not available or were not reviewed.

History
Social Studies Content Standards, May 1997

Geography
Ibid.

Mathematics
Content Standards Foundation Skills, May 1997

Science
Science Content Standards, May 1997

Maine

English/Language Arts
Standards were not available or were not reviewed.

History
Learning Results (Social Studies), May 1997

Geography
Ibid.

Mathematics
Curriculum Framework for Mathematics and Science, Undated, but post-1995

Science
Ibid.

Maryland

English/Language Arts
Standards were not available or were not reviewed.

History
(1) *K-8 Social Studies Outcomes and Indicators*, September 1996
(2) *High School Core Learning Goals*, September 1996

Geography
(1) *K-8 Social Studies Outcomes and Indicators*, Draft Revisions, 1997
(2) *High School Core Learning Goals*, 1997

Mathematics
(1) *Mathematics—A Maryland Curriculum Framework*, 1985
(2) *High School Core Learning Goals, Mathematics*, September 1996

Science
No standards were available for review.

Massachusetts

English/Language Arts
English Language Arts Curriculum Framework, January 1997

History
History and Social Science Framework, July 1997

Geography
Ibid.

Mathematics
Mathematics Curriculum Framework, December 1995

Science
Science & Technology Curriculum Framework: Owning the Questions Through Science & Technology, 1997

Michigan

English/Language Arts
Model Content Standards for Curriculum: English Language Arts, October 1996

History
Model Content Standards for Curriculum: Social Studies, Draft, received May 1997

Geography
Curriculum Framework, 1996

Mathematics
Model Content Standards for Curriculum, including *Academic Core Curriculum Content Standards*, July 1996

Science
No standards were available for review.

Minnesota

English/Language Arts
Minnesota Standards for (1) Read, View, and Listen; (2) Writing and Speaking, and (3) Conducting Research, Downloaded March 1997.

History
High Standards: Profile of Learning (Social Studies), Draft, received May 1997

Geography
The Profile of Learning Preparatory Standards (Primary, Intermediate, Middle, High School Levels), April 1997

Mathematics
K-12 Mathematics Framework, Draft chapters, 1997

Science
No standards were available for review.

Mississippi

English/Language Arts
Language Arts Framework, 1996

History
No standards were available for review.

Geography
Social Studies Framework, First Draft, Fall 1997

Mathematics
Mathematics Curriculum Structure, 1995

Science
Science Framework, 1996

Missouri

English/Language Arts
Framework for Curriculum Development in Communication Arts, K-12, 1996

History
The Show-Me Standards: Social Studies, January 1996

Geography
Framework for Curriculum Development in Social Studies K-12, 1996

Mathematics
Framework for Curriculum Development in Mathematics, K-12, 1996

Science
Framework for Curriculum Development in Science, K-12, 1996

Montana

English/Language Arts
Standards were not available or were not reviewed.

History
No standards were available for review.

Geography
Ibid.

Mathematics
Framework for Improving Mathematics and Science Education, 1996

Science
No standards were available for review.

Nebraska

English/Language Arts
Standards were not available or were not reviewed.

History
A Strategic Plan for Social Studies in Nebraska, June 1993

Geography
No standards were available for review..

Mathematics
Mathematics and Science Frameworks for Nebraska Schools, March 1994

Science
Ibid.

Nevada

No standards were available for review.

New Hampshire

English/Language Arts
K-12 English Language Arts Curriculum Framework, June 1995

History
K-12 Social Studies Curriculum Framework, May 1996

Geography
K-12 Social Studies Curriculum Framework, August 1995

Mathematics
K-12 Mathematics Curriculum Framework, February 1995

Science
K-12 Science Curriculum Framework, 1995

New Jersey

English/Language Arts
Core Curriculum Content Standards for Language Arts Literacy, Downloaded April 1997

History
Core Curriculum Content Standards for Social Studies, May 1996

Geography
Ibid.

Mathematics
(1) *Core Curriculum Content Standards for Mathematics*, 1995 (revised 1996)
(2) *New Jersey Mathematics Curriculum Framework*, 1996

Science
Core Curriculum Content Standards for Science, 1996

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New Mexico

English/Language Arts
Standards were not available or were not reviewed.

History
Social Studies K-12 Content Standards with Benchmarks, August 1996

Geography
Social Studies K-12 Content Standards with Benchmarks, Winter 1997

Mathematics
Content Standards with Benchmarks, Fall 1996

Science
Ibid.

New York

English/Language Arts
(1) *Learning Standards for English Language Arts*, 1996
(2) *English Language Arts Resource Guide*, 1996 (Incomplete Drafts)

History
Preliminary Draft Framework for Social Studies, June 1995

Geography
Learning Standards for Social Studies, Revised Edition, June 1996

Mathematics
Learning Standards for Mathematics, Science and Technology, March 1996

Science
Ibid.

North Carolina

English/Language Arts
Standards were not available or were not reviewed.

History
Standard Course of Study: Social Studies Curriculum, Draft, received May 1997

Geography
Social Studies Standard Course of Study: Framework and Teacher Handbook, 1997

Mathematics
Standard Course of Study and Grade Level Competencies, Mathematics K-12, 1992, 1993

Science
No standards were available for review.

North Dakota

English/Language Arts
Standards were not available or were not reviewed.

History
No standards were available for review.

Geography
North Dakota Curriculum Frameworks, January 1993

Mathematics
Mathematics Curriculum Framework Standards and Benchmarks, Revised 1996; Draft in progress, March 1997

Science
(1) *Curriculum Frameworks*, 1993
(2) *Elementary Science Curriculum Guide*, 1988

Ohio

English/Language Arts
Model Competency-Based Language Arts Program, 1996

History
Model Competency-Based Social Studies Program, November 1993

Geography
Model Competency-Based Social Studies Program, 1994

Mathematics
Model Competency-Based Mathematics Program, November 1990

Science
No standards were available for review.

Oklahoma

English/Language Arts
A Core Curriculum for our Children's Future: Priority Academic Student Skills, September 1993

History
Priority Academic Student Skills: Social Studies, March 1997

Geography
Ibid.

Mathematics
Priority Academic Student Skills: Mathematics, March 1997

Science
No standards were available for review.

Oregon

English/Language Arts
(1) *Teacher Support—Oregon Standards: English*, January 1997
(2) *Writing Prompts*, December 1996
(3) *Reading Assessment: Grades 3, 5, 8, and 10 Sample Tests*, January 1997
(4) *Writing Assessment: Test Specifications, Grades 3, 5, 8, and 10*, April 1997

History
No standards were available for review.

Geography
Ibid.

Mathematics
(1) *Standards*, January 1997
(2) *Oregon Statewide Mathematics Assessment, Test Specifications Grade 3, Grade 5, Grade 8, Grade 10*, 1997
(3) Sample Tests for (2)
(4) *Oregon Standards: Mathematics Teacher Support Package*, October, 1996

Science
(1) *Oregon's Content Standards, 1997-1998: Introductory Packet*
(2) *Oregon Standards: Science Teacher Support Package*, January 1997

Pennsylvania

English/Language Arts
Standards were not available or were not reviewed.

History
Chapter Five Learning Outcomes, 1994

Geography
No standards were available for review.

Mathematics
Proposed Academic Standards for Mathematics 'for the Governor's Advisory Commission on Academic Standards,' Undated but clearly 1997

Science
No standards were available for review.

Rhode Island

English/Language Arts
Standards were not available or were not reviewed.

History
No standards were available for review.

Geography
Ibid.

Mathematics
Mathematics Framework K-12, October 1995

Science
Science Literacy for ALL Students: The Rhode Island Science Framework, Revised edition, 1995

South Carolina

English/Language Arts
Standards were not available or were not reviewed.

History
No standards were available for review.

Geography
Ibid.

Mathematics
(1) *Mathematics Framework*, November 1993
(2) *Mathematics and Academic Achievement Standards*, November 1995

Science
(1) *Science Framework*, 1996
(2) *Science Achievement Standards*, 1996

South Dakota

English/Language Arts
Standards were not available or were not reviewed.

History
No standards were available for review.

Geography
Ibid.

Mathematics
Mathematics Content Standards, June 1996

Science
No standards were available for review.

Tennessee

English/Language Arts
K-12 English Language Arts Curriculum Framework, December 1996

History
K-12 Social Studies Curriculum Framework, May 1997

Geography
K-12 Social Studies Curriculum Framework, May 1996

Mathematics
(1) *K-8 Mathematics Framework*, October 1996
(2) *Mathematics Curriculum Framework, Grades 9-12*, November 1991

Science
K-12 Science Framework, 1995

Texas

English/Language Arts
Texas Essential Knowledge and Skills (TEKS) for English Language Arts and Reading, Draft, April 1997; subsequent appraisal: *TEKS for English Language Arts and Reading*, as adopted, July 1997

History
Texas Essential Knowledge and Skills for Social Studies, Draft, August 1997

Geography
Texas Essential Knowledge and Skills for Social Studies, Chapter 113, September 1997

Mathematics
(1) *Texas Essential Knowledge and Skills for Mathematics*, Chapter 111, to be implemented September 1998
(2) *Texas Essential Knowledge and Skills for Mathematics*, Chapter C, 9-12, September 1996

Science
Texas Essential Knowledge and Skills for Science, 1997

Utah

English/Language Arts
(1) *Core Curriculum: Language Arts, Grades K-6*, Revised 1996
(2) *Core Curriculum: Language Arts, Grades 7-12*, Revised 1991

History
Core Curriculum: Social Studies, Revised, received May 1997

Geography
Core Curriculum: Social Studies, 1993 and 1996

Mathematics
Core Curriculum: Mathematics Units, September 1996

Science
Elementary Science Core; Secondary Science Core, 1994

Vermont

English/Language Arts
Standards were not available or were not reviewed.

History
Framework of Standards and Learning Opportunities: History and Social Science Standards, 1996

Geography
Ibid.

Mathematics
Framework of Standards and Learning Opportunities: Science, Mathematics and Technology Standards, 1996

Science
Ibid.

Virginia

English/Language Arts
English Standards of Learning, June 1995

History
History and Social Science Standards of Learning, June 1995

Geography
Ibid.

Mathematics
Mathematics Standards of Learning, June 1995

Science
Science Standards of Learning, June 1995

Washington

English/Language Arts
Essential Academic Learning Requirements: Reading, Writing, and Communication, February 1997

History
Essential Academic Learning Requirements: Social Studies, Draft, received July 1997

Geography
Essential Academic Learning Requirements: Social Studies, February 1997

Mathematics
Essential Academic Learning Requirements: Mathematics, February 1997

Science
Essential Academic Learning Requirements: Technical Manual, 1997

West Virginia

English/Language Arts
Standards were not available or were not reviewed.

History
Instructional Goals and Objectives for West Virginia Schools: Adolescent Social Studies Education, Draft, received May 1997

Geography
Instructional Goals and Objectives for West Virginia Schools, 1997

Mathematics
Instructional Goals and Objectives for West Virginia Schools, September 1996

Science
Documents (no title, no date) downloaded from http://access.k12.wv.us/~dschafer

Wisconsin

English/Language Arts
Academic Content and Performance Standards for the English Language Arts, Second Draft, February 1997

History
Model Academic Standards for Social Studies, Draft, September 1997

Geography
Ibid.

Mathematics
Model Academic Standards for Mathematics, Draft, 1997

Science
(1) *Model Academic Standards for Science*, Draft, 1997
(2) *A Guide To Curriculum Planning in Science*, Chapters 8–11, 1986 (1995 printing)

Wyoming

No standards were available for review.

ENDNOTES

1. The authors' evaluations of the state standards were for the most part conducted in 1997. Thus, the reader should keep in mind that some standards documents evaluated in these reports have been revised or superseded. Please see Appendix II for information about the edition of each standards document that was evaluated.

2. Dr. Stotsky's initial appraisal, *State English Standards* (July 1997), did not contain letter grades. However, subsequent to the publication of that report, she developed a grading scale and applied it to the states in her evaluation. All of the states she evaluated were given a raw score, out of 109 possible points. States with standards were given an additional 10 raw points simply for having standards, and then those adjusted scores (still out of 109 possible points) were converted to percentages, using the following grading scale: A 88-100%; B 76-87%; C 64-75%; D 52-63%; F 0-51%.

3. Subsequent to the publication of *State English Standards* (July 1997), Dr. Stotsky evaluated the final draft of Texas's English standards at the request of senior state officials. The letter grade in this table is based on the later evaluation. See Appendix II for details.

4. Susan Munroe and Terry Smith, *State Geography Standards: An Appraisal of Geography Standards in 38 States and the District of Columbia*, Fordham Report Vol. 2, No. 2, February 1998, 6.

5. David Warren Saxe, *State History Standards: An Appraisal of History Standards in 37 States and the District of Columbia*, Fordham Report Vol. 2, No. 1, 11.

6. Sandra Stotsky, "Vague Standards, No Achievement," *Crisis in Education*, February 1998, 26.

7. Patte Barth, "Virginia's Version of Excellence," *The American School Board Journal*, March 1998, 41.

8. Saxe, 13.

9. Ralph A. Raimi and Lawrence S. Braden, *State Mathematics Standards: An Appraisal of Math Standards in 46 States, the District of Columbia, and Japan*, Fordham Report Vol. 2, No. 3, March 1998, 12.

10. Saxe, 13.

11. Raimi and Braden, 25.

12. Sandra Stotsky, *State English Standards: An Appraisal of English Language-Arts/Reading Standards in 28 States*, Fordham Report, Vol. 1, No. 1, 10.

13. ibid., 11.

14. For more discussion on this point, please see Diane Ravitch and Chester E. Finn, Jr., *What Do Our 17-Year-Olds Know?* (New York: Harper & Row, 1987), pp. 15-21.

15. E.D. Hirsch, Jr., *The Schools We Need and Why We Don't Have Them* (New York: Doubleday, 1996), pp. 69-126.

16. Neil Postman, *The End of Education* (New York: Knopf, 1995), pp. 129-142.

17. Saxe, 17.

18. ibid., 19.

19. Raimi and Braden, vii.

20. ibid., 29.

21. Stotsky, 15-16.

22. ibid., 54.

23. Raimi and Braden, 16.

24. ibid.

25. ibid., 45.

26. Stotsky, 18.

27. ibid.

28. ibid., 73.

29. Raimi and Braden, 36.

30. Saxe, 20.

31. ibid., 37.

32. Raimi and Braden, 4.

33. Lawrence S. Lerner, *State Science Standards: An Appraisal of Science Standards in 36 States*, Fordham Report Vol. 2, No. 4, March 1998, 2. The models to which Lerner refers are: *National Science Education Standards* (1995); Project 2061, Science for All Americans (1990); *Project 2061, Benchmarks for Science Literacy* (1993); and *Scope, Sequence, and Coordination of Secondary School Science* (1992).

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